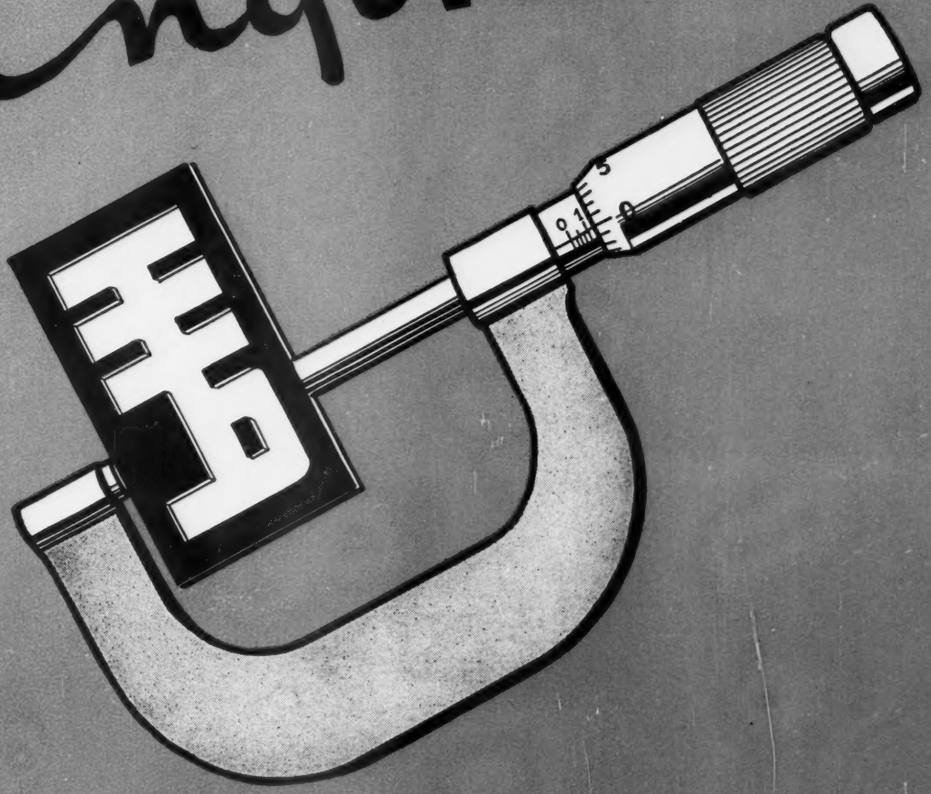
Printing Equipment Engineer



MAY, 1941

A TECHNICAL PUBLICATION FOR PRODUCTION AND MECHANICAL EXECUTIVES IN THE GRAPHIC ARTS INDUSTRY

MAKE no mistake about this—the Blue Streak One-Turn Shift is the fastest, the simplest, the surest means of shifting magazines—less than two seconds from one magazine to another.

At No Extra Cost!

The Linotype One-Turn Shift is a simple direct drive to the elevating shaft of the magazine frames. Shifting of magazines is made effortless and speedy by the simple, factory-sealed, flat spiral springs that actually counterbalance the entire magazine load.

The operator merely moves the convenient One-Turn Shift handle—the flat spiral springs supply the needed energy. No time-consuming preliminaries. Depress the safety lever and turn!

One-Turn Shift is standard equipment on all Blue Streak Linotypes—*no extra cost.* Ask your Linotype representative.

TRADE LINOTYPE MARK

Linotype Spartan Medium

STA-HI MASTER FORMER WITH MARVELOUS AUTOMATIC BOLSTER FORMING BARS

The Sta-Hi Master Former leads the way in preparing dry-mats ready for casting units, Automatically Vacuum Shrunk, Automatically Vacuum Formed to Uniform Casting Levels, Automatically Electric Baked.

The enthusiasm of Sta-Hi Master Former owners is bringing in new orders for this amazing machine, because of its Remarkable Performance and Faultless Product.

Sta-Hi is anxious to have you see this marvelous and modern machine in operation and glad to furnish you with names of Loyal Owners. See the great development of Automatic Follow-Up Bolster Bars, Full Floating Base Heater, Automatic Vacuum Shrinking, Automatic Heat Control, Automatic Full Electric Timers and many other Exclusive Sta-Hi Features effecting improved dry-mat products, reflecting Better-than-ever-Casting and Printing Levels.

★

AUTOMATIC VAC-SHRINK DEVICE
EFFECTING MECHANICAL SHRINKAGE CONTROL

FULL FLOATING BASE HEATER
POSITIVE LOCK-UP WITH VACUUM CHAMBER

AUTOMATIC ELECTRIC HEAT CONTROL
GUARANTEES IMPROVED ELECTRIC BAKING

AUTOMATIC FULL ELECTRIC TIMERS
NO GEARS OR SPRINGS — POSITIVE ACTION

NEW TYPE RADIAL HEATING ELEMENTS
IMPROVED HEAT DISTRIBUTION TO MAT

PERFECTED NEW VACUUM CONNECTIONS
FASTER VACUUM FORMING WHILE MAT IS PLASTIC

★

STA-HI CORPORATION
1020 CROCKER STREET
LOS ANGELES, CALIFORNIA

Trends in newspaper design, engraving and presswork analyzed

By DOUGLAS C. McMURTRIE

II.

A GHASTLY thing that can be done (and we see it done frequently) is to have two single-column heads set in the same style made up side by side at the top of a column. When you look rapidly at that page, you read the head right across the two columns, instead of hesitating at the almost invisible column rule, which, by the way, is getting more and more invisible all the time.

Streamers represent another feature that deserves consideration. Many newspapers adopt a style calling for a line of caps across the top of the page — come what may. I have seen newspapers which have adopted such a style reduced, on dull news days, to the desperate expedient of reporting zero weather this morning. This was the news featured in the streamer across the top of the page. It seems to me we ought to leave such a feature a bit flexible. Might it not be best on the whole to print a streamer only when there is news of importance to tell. Such variety of practice might prove agreeable to readers.

But beyond this, I think we have a better form of makeup available. An excellent style of makeup for real display is to use an upper and lower case head in two or three lines, perhaps across four columns, telling the real story of the day, if there is one, and then perhaps a two-column head on the other side of the paper, with some variety in between. This makes a livelier and more interesting page than the same old cap streamer across the page every day, absolutely irrespective of the significance of the news. When you have such a four-column head in a couple of lines, then you also have the opportunity to use some common sense in the emphasis on that head. You can make it three columns some days and four columns other days. You can thus reflect in some degree the significance or insignificance of that day's news.

If you must use streamers, set them in the most readable alphabet which is at your disposal. Streamers in upper and lower case, even though not exceedingly large, are more vivid and easier to read, and more interesting.

The next question concerns body type. There are lots of good body types available. The companies that make keyboard machines, offer you excellent body faces the design of which has been carefully studied to meet the requirements of printing on fast presses with cheap ink on rather low grade newsprint. It is not specially important from the viewpoint of your committee of judges which body type is used, provided it is simple and legible, and is used properly. It should be of a reasonable size, not too small, and should be adequately leaded.

Text composition which is miserable in appearance and uncomfortable to read, can often be converted to comfortable and easy reading by the simple process of adding another point of leading between lines. That is, perhaps more important than type choice. Many a paper can revolutionize its appearance by leading between lines.

Another matter that interests the judges is the spacing between words and the spacing out of columns. The ratings on body typography are based to a large extent on the craftsmanship of composition. You can take an excellent body type and do a good job with it, provided the craftsmanship is good. And you can take this same body type and set it carelessly — with poor spacing and wide open holes between words, and you can make the composition look downright bad because of poor craftsmanship. When this same typeface is set by a workmanlike operator on the keyboard, and decently and properly spaced between words, it becomes far more effective.

Here is another thing that enters into the picture. In spacing out columns, careless makeup men are prone to drop 12-point slugs between paragraphs to make the column come out even at the bottom of the page. Definitely this is bad makeup. The whole column should be spaced out uniformly, and not too extensively. But at this point the editor dictating the page layout must also help. Compositors can do much but there is a limit to the number of rabbits they can pull out of an empty hat.

The matter of column rule is almost more important today than any other feature in newspaper production, excepting possibly a decent type size and adequate leading. The newspaper profession is going bad in many instances on column rule widths. A superintendent will come along and figure that, by reducing the column rule first to 4 pt. and then a little later 3 pt., a considerable poundage of paper, and therefore so much money can be saved each year. I suggest that with the present competition for the attention of readers, you would be a lot better off and save three times as much by dropping a whole column off the width of the paper. You might just as well do this if you want to save paper. It is the logical way to do it. But leave what remains of the paper in

(*Continued on Page 40*)

Defense Program in Relation to Printing Equipment

DAVID J. WINKWORTH, Associate Manager of Pennsylvania Newspaper Publishers' Association discussed the question: *How will national defense affect newspaper supplies and machinery?* at the recent Pennsylvania Mechanical Conference. With respect to zinc, he said, the temporary shortage will be relieved soon by the production of smelting furnaces which have been or will be started. Type metal companies seem to be unanimous in their belief that no shortage will be experienced in type metals. A large tin importing company thinks customers need not worry about the tin situation because, if shipments are not interfered with, the supplies reaching this country will continue to run far in excess of current requirements. Government negotiation for erection of a tin smelter for refining Bolivian tin would replace the East Indian source of supply should it be curtailed or stopped.

Three large manufacturers of composing room machinery are not as optimistic as the metal manufacturing companies. All three manufacturers are in agreement that protection against future conditions rests in anticipating needs as far in advance as possible. A constant increase in defense orders going to these manufacturers indicates a diversion of facilities to purposes other than the building of printing machinery is inevitable.

Defense priorities already are being felt in the manufacture of newspaper presses. Press gears are made of nickel steel which is not obtainable except for defense materials. Neoprene, used for some parts, is on the list of materials not available. Press manufacturing companies, however, are putting much thought and money into development of substitutes for some of the most critical items. Without going back to sleeve bearings, press manufacturers are at the mercy of anti-friction bearing manufacturers, who, in many cases, are almost entirely tied up on defense work.

Printing equipment manufacturers would much prefer to predicate plans for the maintenance of manufacturing and service facilities on a determination among printers and publishers to continue their own plant development programs. A constructive program for continual replacement so that no one year brings a heavy load is the program sought.

For true composing room efficiency consider these facts—

A surprising percentage of the area of any advertisement is white space, which is represented in the form by leads, slugs, furniture, and so forth.

Blanking-out material plays, therefore, an important role in composing room operation. In spite of the fact that true economy dictates the wisdom of having a generous and never-failing supply of strip material ready to the compositor's hand, relatively few composing rooms have plenty of strip on hand to meet all needs.

The best way to provide an adequate-plus supply of strip material is to have equipment to produce it, on the composing room floor. The next question is "what equipment?"

Elrod is the answer to this question. Consider these facts.

1. The Elrod lead, slug, rule and base caster is superlatively simple in both mechanism and operation. The purchaser of Elrod equipment gets little in the way of mechanical elaboration, but much in operating satisfaction, comfort, and production economy.

2. The Elrod provides, in one simple unit, a range of production from 1 pt. leads to 36 pt. rule, slugs, or base. Lengths of 36-pt. strip in the right height provide ideal base for either photo-engravings, electrotypes, or shell casts.

3. The Elrod requires the minimum of operator attention. Once started, it will run for hours at a time with little attention other than occasionally to replenish the supply of metal in the crucible and to remove the accumulated product from the delivery table.

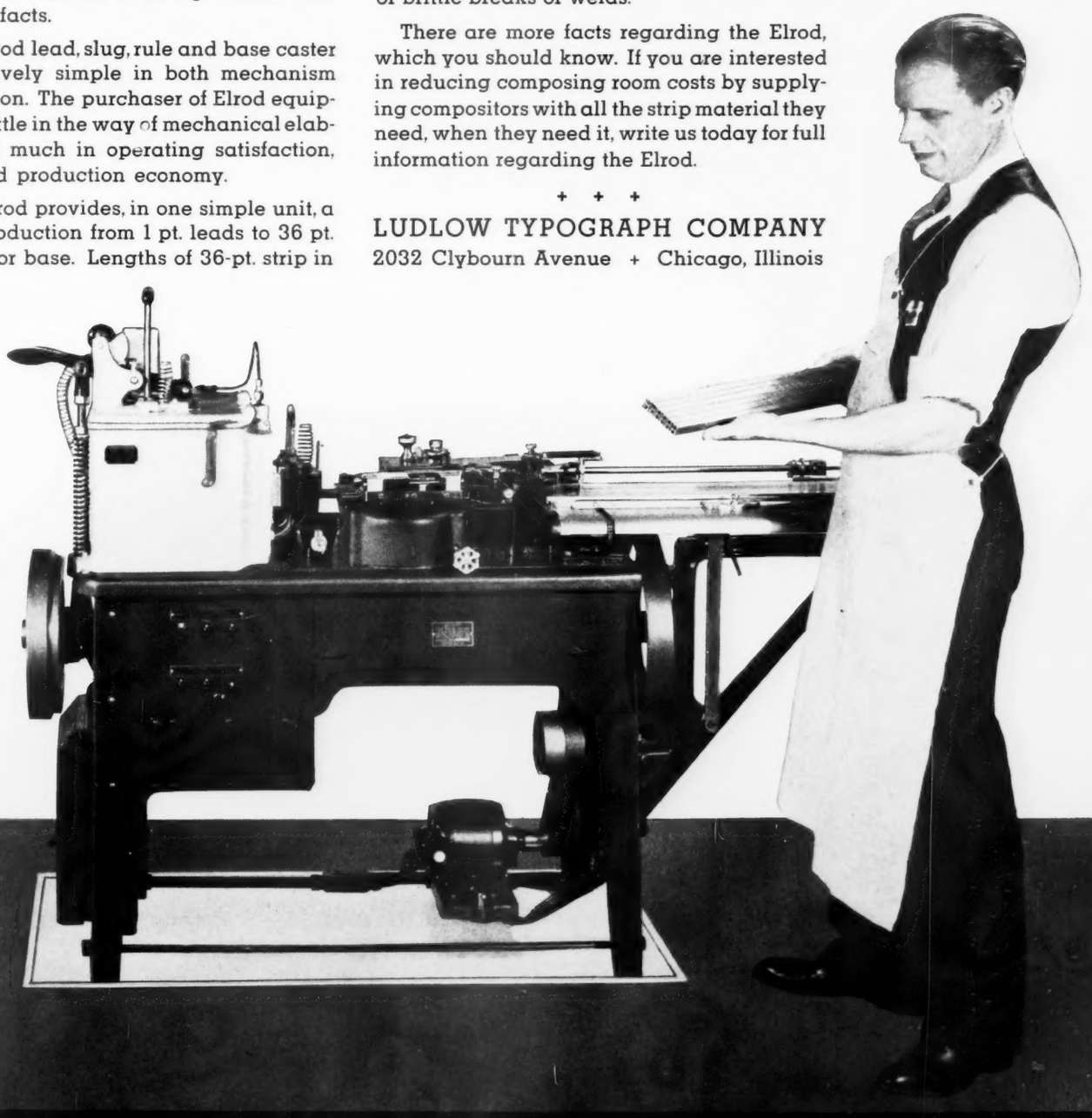
4. In addition to low cost of operation, the first cost of the Elrod is the lowest of any strip caster that produces a comparable range of material.

5. The Elrod produces the highest quality strip material. Elrod-cast leads, slugs, rule and base, being formed of solid metal continuously drawn from the crucible, are free from air holes or brittle breaks or welds.

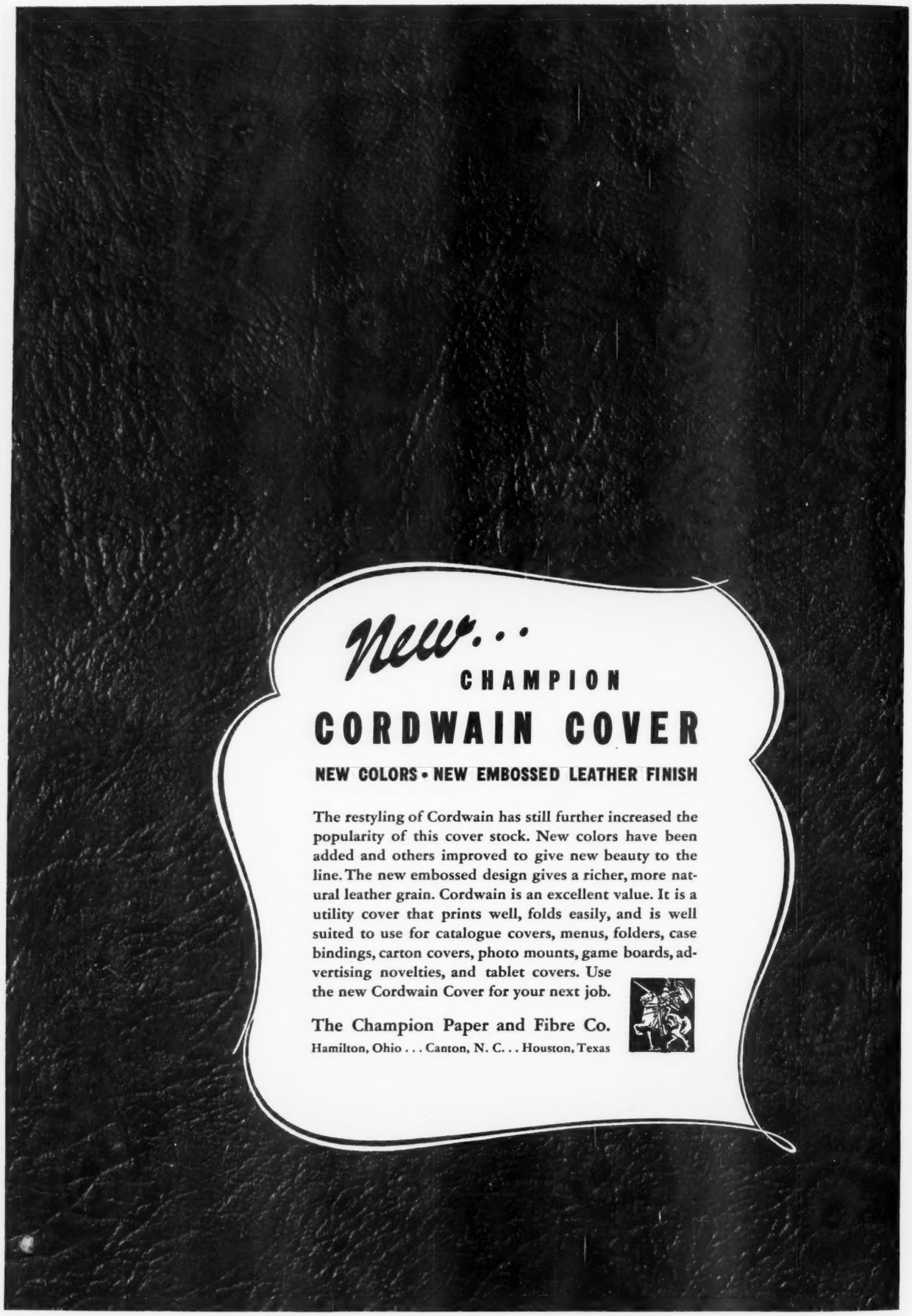
There are more facts regarding the Elrod, which you should know. If you are interested in reducing composing room costs by supplying compositors with all the strip material they need, when they need it, write us today for full information regarding the Elrod.

\+ + +

LUDLOW TYPOGRAPH COMPANY
2032 Clybourn Avenue + Chicago, Illinois



Ludlow Karnak Black Condensed
Karnak Intermediate


New...
CHAMPION
CORDWAIN COVER
NEW COLORS • NEW EMBOSSED LEATHER FINISH
The restyling of Cordwain has still further increased the popularity of this cover stock. New colors have been added and others improved to give new beauty to the line. The new embossed design gives a richer, more natural leather grain. Cordwain is an excellent value. It is a utility cover that prints well, folds easily, and is well suited to use for catalogue covers, menus, folders, case bindings, carton covers, photo mounts, game boards, advertising novelties, and tablet covers. Use the new Cordwain Cover for your next job.
The Champion Paper and Fibre Co.
Hamilton, Ohio . . . Canton, N. C. . . Houston, Texas

TECHNICAL BOOKS

- **LITHOGRAPHER'S MANUAL — Compiled by Walter E. Soderstrom.** Second revised edition. Technical information from copy to finished job. Nationally known technical men contributed the bulk of practical camera, platemaking and presswork information. Size 8½ in. by 11¼ in. Bound in red cloth, gold stamped. Many of the 368 pages are illustrated. Price $5 per copy, cash with order.
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• ***Send All Orders With Remittance to***

PRINTING EQUIPMENT Engineer

1276 W. Third Street
Cleveland, Ohio

TECHNICAL PUBLICATION FOR THE MECHANICAL EXECUTIVE RESPONSIBLE FOR PRINTING PRODUCTION, EQUIPMENT AND SUPPLIES IN THE COMMERCIAL MAGAZINE, PRIVATE PLANT AND DAILY NEWSPAPER FIELD.

Printing Equipment Engineer

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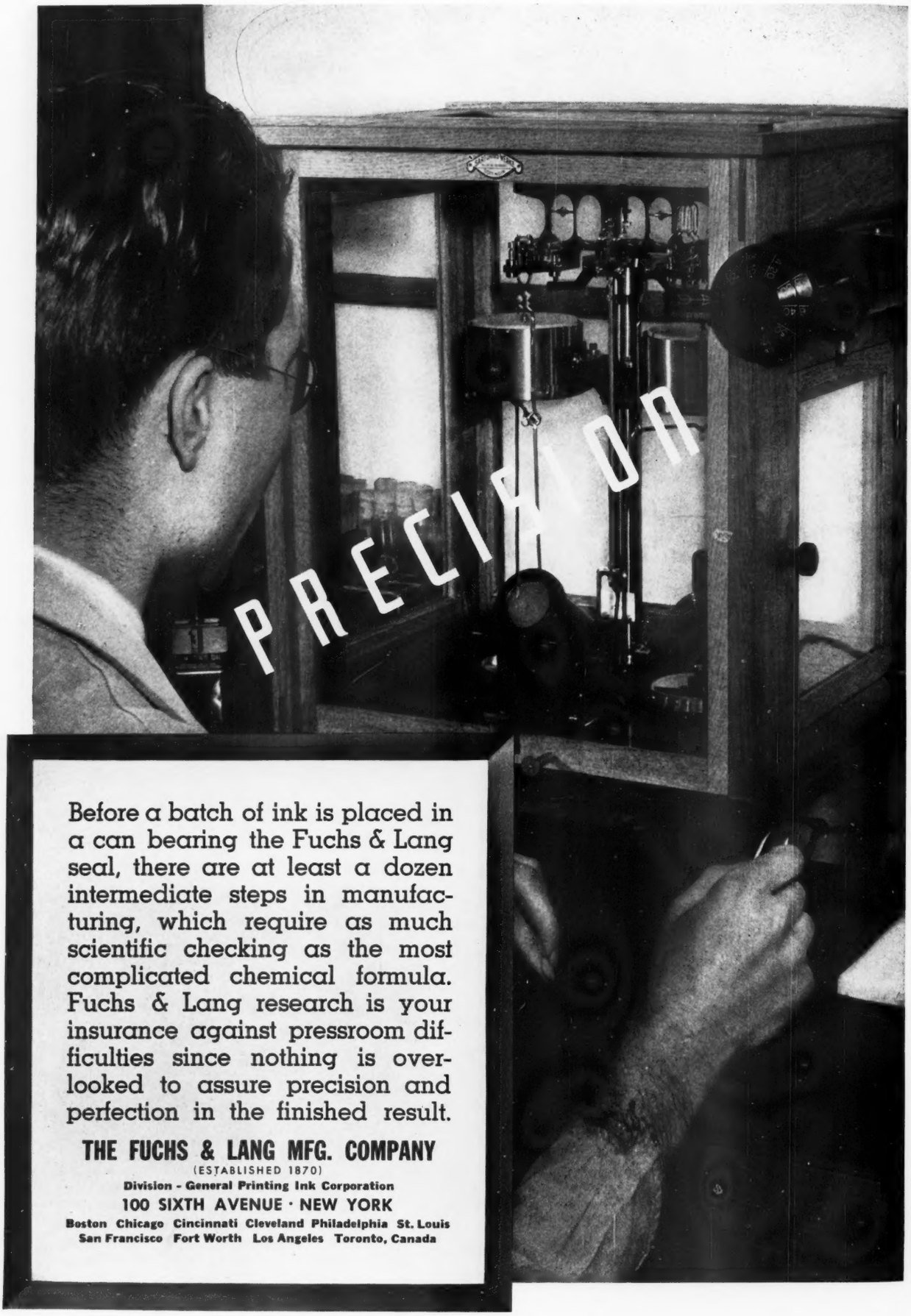
Member Controlled CCA Circulation Audit



Before a batch of ink is placed in a can bearing the Fuchs & Lang seal, there are at least a dozen intermediate steps in manufacturing, which require as much scientific checking as the most complicated chemical formula. Fuchs & Lang research is your insurance against pressroom difficulties since nothing is overlooked to assure precision and perfection in the finished result.

THE FUCHS & LANG MFG. COMPANY

(ESTABLISHED 1870)

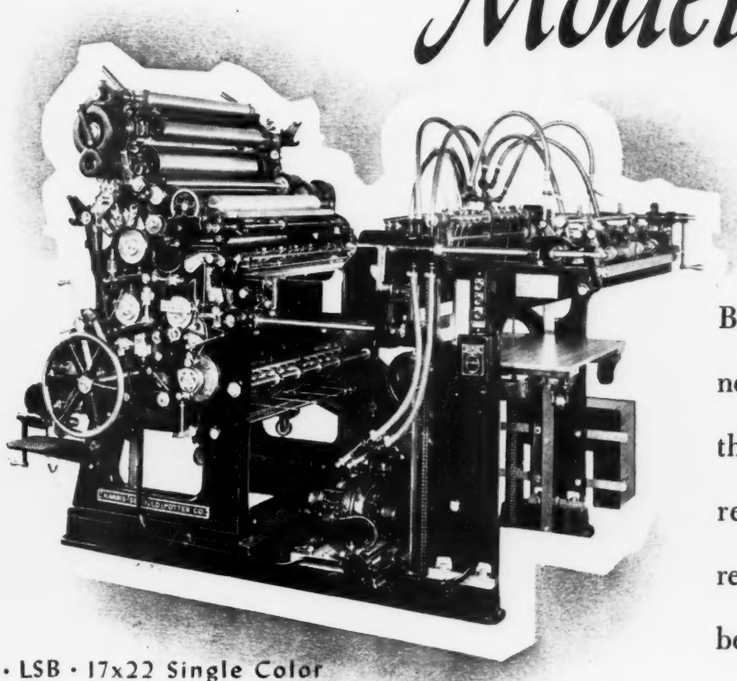
Division - General Printing Ink Corporation

100 SIXTH AVENUE · NEW YORK

Boston Chicago Cincinnati Cleveland Philadelphia St. Louis
San Francisco Fort Worth Los Angeles Toronto, Canada

Today WITH BUSINESS KEENLY ATTUNED TO MODERN IDEAS

OFFSET IS MORE AND MORE THE — *Modern Method*



· LSB · 17x22 Single Color

Business cannot escape change. Every new idea, every altered plan... from the shifting of population to the restyling of products...calls for revised efforts. The printer is in a better position to meet these changes when his pressroom facilities afford the production of modern offset.

Moreover, ANY printer can best capitalize upon modern tendencies with Offset produced on the craftsman's press...the Harris.

HARRIS LITHO·CHEMICALS

Through research, Harris has developed and standardized new chemicals for both deep etch and surface plate making processes. Full details upon request. Write us with reference to your lithographic problems.

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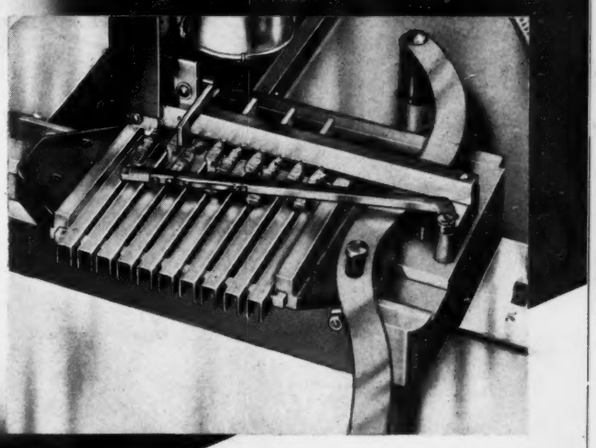
General Offices: 4510 East 71st St., Cleveland, Ohio • *Harris Sales Offices:* New York, 330 West 42nd St. • Chicago, 343 So. Dearborn St. • Dayton, 819 Washington St. • Atlanta, 120 Spring St., N.W. • San Francisco, 420 Market St. • Harris-Seybold-Potter (Canada) Ltd., Toronto, Montreal • *Factories:* Cleveland, Dayton

CONTROL!
Your printing press will never have to operate under the conditions shown above, but the ship's printer aboard this cruiser knows his sheet, on the Kluge, is always under perfect control.
KLUGE AUTOMATIC PRESS
BRANDTJEN and KLUGE, Inc.
SAINT PAUL, MINNESOTA

The NEW ECONOMY ROUSE BAND SAW costs less than a good circular saw.

The Ludlow Slug Holder permits the sawing of Ludlow slugs to different measures without underpinning. The Ludlow mats shown cast the projections which determine position of cut. No extra operation is necessary.



An entirely NEW feature on the NEW ECONOMY ROUSE BAND SAW makes it possible, for the first time, to get automatic slug length selection on Ludlow slugs. Ludlow equipped plants will find that this feature saves time and eliminates waste of underpinning materials.

NEW ECONOMY *Rouse* BAND SAW
1/2 PRICE OF MASTER MODEL

Here is the solution to the problem of sawing slugs for Run-Arounds in ads and catalog pages. The NEW ECONOMY Rouse Band Saw will take the full production of one to six typesetting machines and saw it to any desired measure --- all the same or hundreds of different lengths --- without setting gauges or changing clamps. It will saw slugs from LUDLOW, Linotype, Intertype, or Linograph --- with equal facility --- and without delaying machine production. The NEW ECONOMY Rouse Band Saw does the same work as the Master Rouse Band Saw. The new LOW PRICE is possible only because of the elimination of the delicate mechanical slug feed and the substitution of hand operated feed. The slug length selection is the same as on the larger models. Sawing is equally accurate. You have all the essential features of the most modern and efficient method of selecting and sawing slugs to measure at a fraction of the cost of mechanically fed models. Even the speed of sawing is almost as fast --- yet the price of the NEW ECONOMY Rouse Band Saw is less than that of a good circular saw.

Now is the time to get the full facts on reducing sawing costs. A note on your letterhead, or the return of the coupon will bring you the complete details. Mail it today.

See the ECONOMY Rouse Band Saw in operation at the A. N. P. A. Mechanical Conference, Hotel Statler, Buffalo, New York, on June 9, 10, 11.

H. B. ROUSE & COMPANY

2216 NORTH WAYNE AVENUE, CHICAGO, ILLINOIS

Please send complete information on the NEW ECONOMY ROUSE BAND SAW.

Name_____

Address_____

City_____

We saved 3 hours on this job...

on our

ATF 17×22 KELLY

Say...A. C. Carran, *President*
W. M. Carran, *Secretary-Treasurer*
The S. P. Mount Printing Co., Cleveland, Ohio

Time saved in production is money earned,

so it's natural for these prosperous Cleveland printers to be well satisfied with their Kellys. According to them, the advantages gained from the Kelly's speedy get-away and the high average output of salable sheets deserve much of the credit for the success and prosperity of their business.

Typical of Kelly performance in this plant is a recent 12-page booklet in seven colors. Five thousand copies were produced on an ATF 17x22 Kelly *in 3 hours less time than it was estimated the job should take by published standards.* This achievement was considered remarkable because of the hairline register required and the general excellence of the finished job. All of the S. P. Mount Printing Company's work must meet a high standard of quality, and though the owners are especially pleased with the time saved on this job, they are equally proud of the uniform high quality of the work produced on their Kellys. To help maintain their excellent reputation and continue their prosperity, they have standardized on Kelly equipment in their plant with two 17x22 and two No. 2 Kellys.

Profitable performance like this offers real proof of the operating advantages of Kelly presses. The Kelly adjustable drop guides, pull side guide, pyramid ink distribution, and full view delivery are designed to save production time and increase the output of acceptable sheets. For every printer, these Kelly features offer a sure road to greater profits. See the new ATF 17x22, and other Kellys, at your nearest ATF Branch Office, or get full details from your ATF Salesman.

ATF also makes the No. 2 and No. 1 Kellys, the Kelly Clipper, Little Giant, and the famous ATF-Webendorfer Offset Presses.

Types used:
Lydian Cursive
Lydians
Garamond Bold

Motored by Kimble

ATF
AMERICAN TYPE FOUNDERS

200 ELMORA AVENUE, ELIZABETH, NEW JERSEY • BRANCHES AND DEALERS IN PRINCIPAL CITIES

The Theory of Good Service

The substantial volume of business executed annually by The Kutztown Publishing Company has been built up mostly on the theory of rendering good service to the customer at all times. A vital part of the organization scheme is insistence upon getting proofs out on time and meeting pre-determined production schedules. It is a matter of pride that a number of firms have been kept on the books of The Kutztown Publishing Company for twenty years or more.

Trip *through a recently modernized Pennsylvania letterpress printing plant situated "out in the open" — Charming building and pleasant working interior for maximum production*

By STAFF WRITER

CULMINATING its 69-year business career, a fine new home has been completed and is now occupied by The Kutztown (Pa.) Publishing Company. The new structure is part of a well-planned building and modernization program. A unique feature about the company is that its plant is located among the rolling hills of eastern Pennsylvania in a fertile agricultural section. In fact, the population of Kutztown is 2250 people or thereabout.

Printing executed by this firm is done by letterpress and is in considerable variety. It ranges from the printing of twenty regular publications of various sizes and circulations, to house organs, catalogs and direct mail literature. Included is a large amount of school and college annual printing for at least fifty schools, a weekly newspaper called *The Kutztown Patriot* and general commercial printing. Incidentally, the firm's executives believe in using printed matter for the company's own promotion. This takes the form of a monthly publication entitled *The Kutztown Letter*. Its size is 4 in. by 6 in., consists of 12 pages and each issue is printed in two colors.

Principal active executives of The Kutztown Publishing Company are Charles H. Esser, President; Ira C. R. Guldin, Treasurer; M. K. Williams, General Superintendent; Jacob R. Esser, a graduate of Carnegie Institute of Technology's Printing Department who is in charge of layout and planning; and Martin H. Ritter, advertising executive and consultant typographer.

Among the production department executives are Composing Room Foreman Samuel Levine, Pressroom Foreman Leon Delworth and Bindery Foreman Warren Weidner. About thirty-five persons are employed.

The Building

In design, the building which houses The Kutztown Publishing Company is Early American. The building is substantially constructed with brick exterior capable of supporting the heavy units used in printing production. The front section of the building follows the dwelling type of architecture which blends most appropriately with the small town atmosphere, and the factory portion in the rear is constructed in harmony with the design of the front part of the building. Building frontage is 48 ft. by 150 ft. depth.

One of the most important features of the building is a well appointed room on the second floor for the private use of customers who may want to plan printed matter, check proofs, or to discuss their work with representatives of the firm. A large round conference table, chairs, reference books, etc., facilitate the task.

The front portion of the building containing the offices is heated with a Holland air-conditioning oil system. The plant portion is heated with automatic coal stoker hot water system.

The entire building is fitted with sprinkler system. The walls are painted with flat white paint.

The four sides of the building are open so that natural daylight enters every nook and corner of the interior. This is made possible because no buildings are situated adjacent, plus a vacant parking

Speaking of printers "taking their own medicine" by publicizing their business, The Kutztown Publishing Company, besides regularly publishing The Kutztown Letter, *monthly, printed a plastic bound de luxe brochure, 12¼ in. by 12¼ in. size, consisting of 20 pages, in which the reader is made acquainted with the aims, policies and services afforded by the firm. The brochure was designed by Howard King and was printed in the company's new quarters. Numerous halftone engravings show interior views of the plant.*

lot and driveways at one side and the rear of the building.

An inter-office telephone communicating system is maintained. At one side of the factory portion of the building is located a truck-level loading platform. Much of the company's paper stock is brought in and completed jobs are transported to destination by truck. An elevator is used to transport forms to and from the composing room on the second floor to the pressroom on the first floor, and to carry paper stock to and from the first to the second floor where paper storage facilities are maintained.

Mechanical Departments

The new building and equipment form a decided contrast to the original two-room country printing office established in Kutztown 69-years ago. President Esser is proud of the building and recognizes the efficiency of modern production equipment for a part of The Kutztown Publishing Company's modernization program included the installation of new machinery. Said he: "Every piece of equipment in our plant was bought new, direct from the manufacturers, and was chosen with extreme care. During our recent rebuilding program a number of very important additions and improvements in equipment were made."

Some new equipment was installed in the composing room. The machine composition equipment was augmented by the addition of two new Linotype machines—a new Model 30 and a Model 8. The three line-composing machines are used to produce composition for most of the publication work. A Monotype caster supplies all spacing material and a considerable quantity of display type. A new Hamilton steel imposing table and two adman cabinets, a Miller bench sawtrimmer, Rouse cabinet-type automatic mitering machine were installed recently. A Model 24 Vandercook proof press, 24 in. by 50 in., is used to pull color proofs in register.

In the job pressroom, a second Miehle Vertical Automatic Press has been added to the one already in use. The cylinder pressroom has been enlarged to provide additional working room about the presses and better paper handling facilities. Cylinder press equipment consists of No. 00, No. 0 and No. 4 Miehles, all equipped with Dexter feeders and non-offset guns. Press sheet registering facilities have been provided by the addition of a Craftsman Line-Up Table.

The bindery department came in for its share of improvement. It has been arranged for more efficient handling of the work and additional equipment will be installed in the near future.

In a large brick warehouse at the rear of the main plant are stored quantities of paper stock used in publication work, which is later brought into the main plant.

The photo from which this illustration was made was taken during the course of a technical session at the 1941 Alumni Reunion, Department of Printing, Carnegie Institute of Technology, April 19. Rear center and speaking is Capt. Gordon V. Durr, Production Unit Engineer, Army War College.

Carnegie Printing Alumni Meeting Successful

CHIEF speaker at the Carnegie Department of Printing Alumni Reunion banquet was Laurance B. Siegfried, University Printer, Syracuse University. He spoke on *Trends in Typography* and reviewed in detail developments which have occurred in the design of type faces and their use during the past year. Robert C. Price, Department of Printing senior, served as toastmaster at the banquet and introduced, for brief comments, Dr. Robert E. Doherty, President of Carnegie Institute of Technology; Dr. Webster N. Jones, Director of the College of Engineering, and Prof. Glen U. Cleeton, Head of the Department of Printing.

The banquet climaxed a series of meetings held in connection with the reunion and conference of the Advisory Council on Graphic Arts Education. The meetings opened on Friday, April 18, with an exhibition by the American Institute of Graphic Arts of the 50 Books of the Year, and inspection of Department of Printing laboratories. An address of welcome was delivered by Dr. Webster N. Jones, Director of the College of Engineering. Robert H. Caffee of Pittsburgh was elected president of the Printing Alumni to succeed O. A. Dickman.

Donald Rein, Executive Secretary, United Typothetae of America, opened the sessions on Saturday, April 19, with a discussion of *New Problems for Management*. His talk was followed by group discussions of technical problems in the graphic arts.

Harry L. Gage, former head of the Department of Printing and president of the Advisory Council on Graphic Arts Education, conducted a round-table discussion Saturday morning on the topic *New Problems for Graphic Arts Education*. Members of the Advisory Council who took part in the discussions included Fred W. Danner, Akron Typesetting Company; O. A. Dickman, New York *Herald Tribune;* John G. Strange, Institute of Paper Chemistry; Dennis F. Hoynes, Central Electrotype Company; Craig R. Spicher, Miehle Printing Machinery and Manufacturing Company; William T. Diefenbach, J. M. Huber Ink Company; Donald Rein, United Typothetae of America; James B. Ashwell, Equity Press, New York; and William S. Papworth, editor, *Paper Progress*.

Production Men Elect

At its April meeting the Association of Publication Production Managers elected the following new officers: T. E. Dalton of Hearst Magazines, president; G. W. Pringle of Dell Publishing Co., treasurer; and T. C. McBride of Street & Smith, secretary. John Stebbins of the *New Yorker* magazine was named chairman of the Program Committee and R. T. Douglas of Robbins Publishing Co. was named chairman of the Membership Committee. James Burns of McGraw Hill Publishing Co. was appointed chairman of the Entertainment Committee.

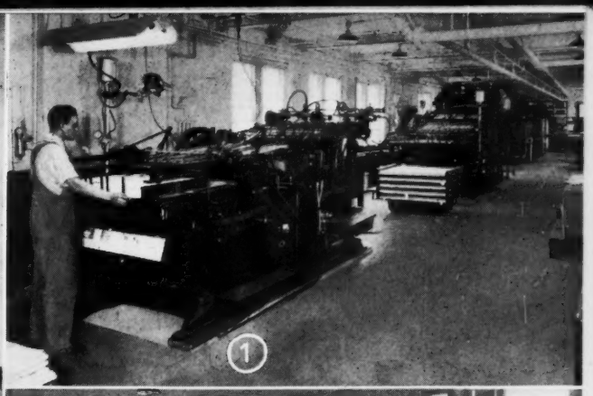
The association was formed two years ago to exchange views and experiences in solving mutual problems of production and manufacture of publications, including the preparation of printing material for publications, and to promote accurate standards and uniformity of precedure.

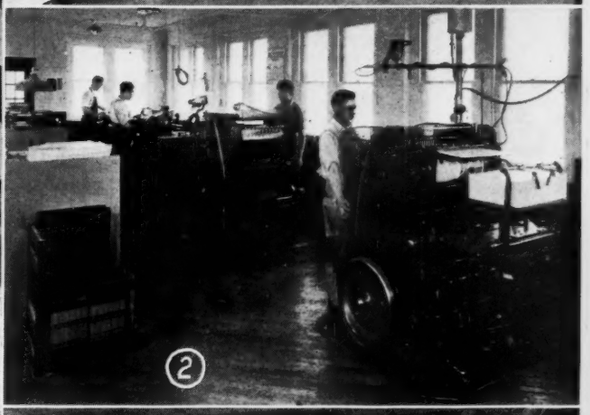
EXECUTIVE ¶s

During the early part of March, Robert Kvidera succeeded Leonard Goneau as business manager of the Marquette University Press in Milwaukee.

Houston Awalt is the first mechanical superintendent of the San Antonio (Tex.) *Express* and *Evening News*. Formerly, he was ad alley foreman. Roy Awalt, a brother, is chief machinist of the San Antonio *Light*.

Norman G. Steltz, for the past twelve years mechanical superintendent of the Olean (N.Y.) *Times-Herald*, has been given an extended leave of absence on account of ill health and has moved his





Upper left—*This is a view of Early American-type brick exterior building of The Kutztown Publishing Company, Kutztown, Pa. While the building abuts the sidewalk, plenty of natural daylight for the entire interior is assured because of the open area immediately surrounding the structure. The Colonial doorway provides a charming entrance to a modern building.*

Lower left—*Kutztown Publishing Company's President, Charles H. Esser, in his office. Mr. Esser is a believer in modernity of equipment—said he: "At the time of purchase every piece of equipment in our plant was bought new, direct from the manufacturer, and was chosen with extreme care."*

1—*Here is a section of The Kutztown Publishing Company's cylinder pressroom. Numerous monthly publications, high school and college annuals compose the bulk of the work executed on the presses. Fluorescent lighting is being installed over each press.*

2—*This illustration of the job press section of The Kutztown Publishing Company shows two Miehle Vertical presses (one of them new) and two platens turning out small dimension printing work.*

3—*General view in composing room of The Kutztown Publishing Company's newly modernized printing plant. Hardwood floors, plenty of natural daylight, plus flat white wall and ceiling paint make surroundings cheerful in this busy department.*

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family to a country place near Wheeling, W. Va. His address is R.F.D. 1, St. Clairsville, Ohio. Previous to his Olean connection he was associated with American Type Founders Company. Mr. Steltz introduced many time-saving features for producing newspapers at minimum cost in the *Times-Herald* mechanical departments. He has written many interesting technical articles, a number of which have appeared in *Printing Equipment Engineer*.

Hugh Norris has succeeded Verne L. Ripley as composing room superintendent of the Commercial Printing & Litho Co., in Akron, Ohio.

John J. Nickels, a well known figure in the type metal branch of the printing industry, passed away the latter part of April at Glencoe, L. I. He had been general manager of E. W. Blatchford & Co.'s New York office. He was 55 years of age and had been with the company for 35 years.

The appointment of J. G. (Jerry) Scales as manager of the ATF Detroit office is announced by Vice President Frederick B. Heitkamp. Mr. Scales has been connected with the graphic arts for the past 26 years, 14 of which were spent in actual work in printing plants. For the past 6 years he has been associated with ATF. His training includes experience both as a pressman and a press mechanic. As sales assistant, he will have with him William Schenk, another ATF man of 7 years experience, while the service department will continue under the charge of Theodore Jarosik.

Werner W. Schaumann, former vice president of the Copifyer Company, Cleveland, and John S. Frelich have recently formed The Lake Lithograph Co. The new corporation is located at 1445 Dodge Court. Mr. Schaumann is president, Mrs. Josephine Frelich, vice president, and Mr. Frelich is secretary-treasurer.

Is "Step-and-Repeat" Coming to the Aid of the Letterpress Printer?

By FRANK M. SHERMAN

IT was the application of "step-and-repeat" methods, by means of which multiple duplicates of the same image were transferred to lithographic press plates, that has been largely responsible for the phenomenal increase in the volume of color lithography during the past twenty years.

Is the application of step-and-repeat methods to the making of photo-engravings now going to offer an opportunity for the letterpress printer to economically produce certain kinds of jobs which have during recent years been outside the scope of practical production in letterpress plants?

The answer would seem to lie in the willingness of photo-engravers to adapt to the production of multiple original engravings a process which has clearly demonstrated its accuracy and practicability in the lithographic industry, and which will enable letterpress printers to sell the product of their presses to buyers of certain kinds of multi-color work to the production of which step-and-repeat methods can be applied to advantage.

Probably it is not generally known that William C. Huebner's first step-and-repeat machine was intended to be used by photo-engravers, and that the object sought was an etched printing plate composed of multiple reproductions made from a single negative. For a variety of reasons there was little development of the idea among photo-engravers, and while multiple original engravings have been made and used occasionally for a quarter of a century or more, there has been no general use of the advantages of the step-and-repeat method by photo-engravers.

Letterpress printers seeking a means of printing multiple duplications of an original have had to depend almost entirely on the electrotyper, because the photo-engraver has not been equipped to produce them.

The modern photo-composing machine, by the use of which practically all step-and-repeat work is now done, is the result of the gradual evolution of the step-and-repeat process and the means of applying it which has taken place in the lithographic industry since the development of the modern offset press. In fact, the methods employed in making multiple exposures on press plates and the printing of these plates on an offset press have been developed together. Each may be said to have been somewhat dependent upon the other for its expanded use—photo-composing needed the modern offset press to express itself, and the offset press has been more extensively used because of the advantages of photo-composing.

That step-and-repeat can be adapted to the production of multiple original photo-engravings has been repeatedly demonstrated. The owner of any modern

(*Continued on Page 46*)

Fig. 1.—*The M-H Universal Process Machine (4 ft. wide by 6 ft. high) is a small photo-composing machine for producing negative or positive multiple image press plates for offset, letterpress or gravure printing. For instance, a small multiple negative containing 10 reproductions of an original single negative may be made on this machine, and then exposed in say four different positions on a larger glass negative. The large negative will then contain 40 duplicates of the original. For letterpress printing, the images or duplicates may then be converted into one large engraving in the usual way.*

The 10-up multiple negative (shown in Fig. 2) in the negative holder has been placed in position on the horizontal notch bar. The hood containing the light source has been placed in exposure position on the negative holder frame. The negative holder containing the 10-up multiple negative is ready to be adjusted to its several positions by means of the notch bar and micrometer vertical and horizontal screw adjustment device, which, manufacturer states, permits accuracy of image position within 0.001 in. The cord with switch extending into the square end of the hood, supplies electricity for illuminating the light source. At the top of the platen are shown two vacuum gauges, one for the amount of vacuum being exerted in the negative holder and the other for the large sensitized film in the platen. Machine is made in two sizes, one with 30 in. by 30 in. platen and the other with 34 in. by 30 in. platen. Rubber-tire casters permit rolling the machine into or out of the darkroom.

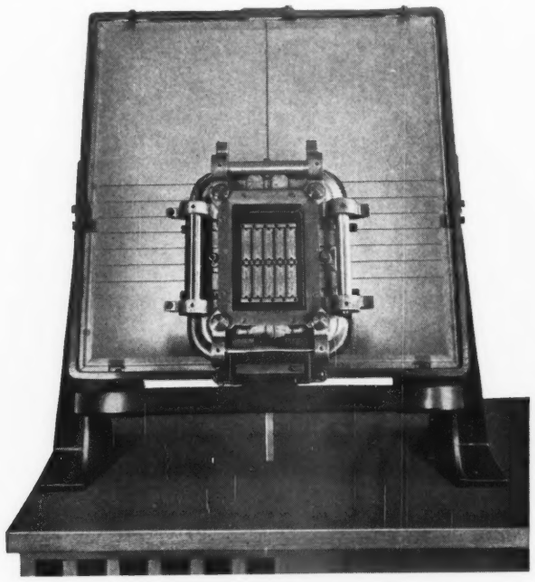

Fig. 2.—*View of M-H Negative Registering Device for registering negatives. In the holder (which is later transferred to the Universal Process Machine shown in Fig. 1) is shown a 10-cup negative. (Size is approx. 20 in. wide by 30 in. high, reproduced here in disproportionate size to the Universal Process Machine in Fig. 1, so as to show more clearly the 10-up negative.) By means of this Registering Device the negative is positioned in accurate right-angle relationship so that as many exposures as are wanted may be in true relationship to each other on the large sensitized film in the Universal Process Machine shown in Fig. 1.*

Photo-Typesetting from line-composing type of matrices provided with photographable letter characters

By MacD SINCLAIR

MEANS for composing type photographically, especially for offset-lith and gravure reproduction, long has been a subject of interest to printers and engineers, particularly in England and continental Europe. In the United States, most printers have felt that until some method was developed for producing type matter by photographic means at equal or less cost than by the use of lead there would be no object in investigating

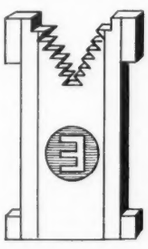

Fig. 1.—Diagram representing standard line-composing machine matrix adapted to photo-typesetting purposes. The usual dies for forming the letter characters from molten metal have been eliminated. Inset broadside in the matrix body is a plaque or plate which in this instance is a section of film negative bearing the character "E". The inset plate may be in negative form (as shown in this diagram) for projection on sensitized film by transmitted *light, or the plate may be opaque for projection by* reflected *light.*

in a serious way these new developments which have been announced from time to time.

Printing Equipment Engineer has published illustrated descriptions of some of these devices from time to time. Just recently, several patents on devices for producing type matter photographically have been granted by the United States Patent Office. Some of these relate to methods proposed by George Westover of Balcombe, England, in which the Monotype keyboard and casting mechanism is utilized with modifications to make these mechanisms suitable for photo-typesetting.

Another group of patents, assigned to Intertype Corporation, relates to methods of using matrices of the type employed in line-composing machines but provided with a specially arranged photographable character. The patents suggest that the proposed methods may be adapted to the well known form of line composing machines with certain modifications to adapt them to photo-typesetting purposes. However, no details are shown or discussed as to the manner of carrying out such adaptation, the patents dealing essentially with suitable mechanism working in conjunction with a camera for individually and successively removing and then exposing each matrix from a previously composed and justified line to a sensitized film contained within the camera. Fundamentally, therefore, the reproduction is on the letter-by-letter system as distinguished from the line-by-line system which is understood to have certain inherent defects from an optical standpoint.

The United States patents utilizing the line-composing type of matrix and assigned to Intertype Corporation represent inventions of Walter Koller of Kuesnacht, Switzerland, and Herman R. Freund, LeRoy W. Willis and Ransom H. Turner of Intertype Corporation.

In the ensuing discussion of the utilization of the line-composing type of matrix for photo-typesetting purposes, no attempt is made to go into exact specifications or complete details. On the basis of information at present available only a general description of the methods and principles of operation as contained in the patents is possible. It is to be understood by the reader, therefore, that the developments so far as known at this time are still in the preliminary stage and that no machines have been seen or offered for sale.

The Matrix

As already indicated, the matrix is of the standard form and size of the ordinary line-composing machine matrix and retains the usual combination distributor teeth. In place of the usual letter-character dies in one edge of the matrix body as used for casting slugs from molten metal, there is substituted a plaque or plate inset broadside in an opening in the matrix body as shown in Fig. 1. This inset plaque may bear either a negative letter character on a piece of film for projection by transmitted light to a sensitized film upon which the type composition is being executed letter-by-letter, or it may bear a letter character formed on a contrasting opaque background for projection by reflected light. The present discussion will be devoted to the use of the negative letter character form of matrix.

As with the regular line-composing machine matrices, the thickness (set-width) of the matrix body is governed by the width of the letter character it bears, *i.e.*, the thickness edgewise of matrix bodies bearing lower case letters such as "i" or "m" would be equal to the widths respectively of these characters. This width is mentioned here because later on it will be explained to the reader how the width of the matrix body is used as a means for regulating the movement of the sensitized film the exact distance represented by the width of the photographable letter character now carried on the flat or broad face of the matrix.

Alignment of the photographically reproduced letter characters one with another may be accomplished by aligning the lugs projecting from the matrix body in the ordinary manner, or by means of a notch at some point in the matrix body in which a suitable detent may be arranged to engage at the time the matrix is positioned before the camera lens.

Proposed Methods for Using Matrix

Two different methods are proposed for photographically producing the type matter represented by composed lines of the abovementioned matrices. Both methods as described start from the point where a justified line of matrices

Executive Meeting Dates

Lithographers National Association—May 27, 28, 29, 30, The Greenbrier, White Sulphur Springs, W. Va. E. H. Wadewitz, President, 295 Madison Ave., New York, N. Y.

A.N.P.A. Mechanical Conference—June 9, 10, 11, Hotel Statler, Buffalo, N. Y. W. E. Wines, Manager, 370 Lexington Ave., New York, N. Y.

United Typothetae of America—Oct. 27, 28, 29, Palmer House, Chicago. Donald Rein, Executive Vice President, 719 Fifteenth St., N. W., Washington, D. C.

International Association of Printing House Craftsmen—August 10, 11, 12, 13, 14, Lord Baltimore Hotel, Baltimore, Md. Harry M. Sachs, Convention Chairman, Room 401, City Hall, Baltimore, Md.

National Association of Photo-Lithographers—September 18, 19, 20, Netherlands Plaza Hotel, Cincinnati, Ohio. Walter E. Soderstrom, Executive Secretary, 1776 Broadway, New York, N. Y.

Illinois Mechanical Conference—September 26, 27, 28, Rockford, Ill. Ed Nagel, Secretary, Champaign (Ill.) *News-Gazette*.

S.N.P.A. Eastern Div. Mechanical Conference—September 1, 2, Louisville, Ky. Walter C. Johnson, Sec.-Mgr., S.N.P.A., P. O. Box 1071, Chattanooga, Tenn.

S.N.P.A., Western Div. Mechanical Conference—February, 1942. C. W. Tabb, Secretary, 723 Texas Bank Bldg., Dallas, Tex.

New England Newspaper Mechanical Conference—October 4, 5, 6, Hotel Statler, Boston, Mass. Walter C. Crighton, Secretary, New London (Conn.) *Day*.

New Jersey Newspaper Mechanical Conference—October 20. Atlantic City. John T. Arnold, Secretary, New Brunswick (N.J.) *Home News*.

New England Newspaper Composing Room Executives—May 4, Beverly, Mass. Conference headquarters, Hawthorne Hotel, Salem, Mass. Joseph Mahoney, Secretary, Holyoke (Mass.) *Transcript*.

American Photo-Engravers Association—Date and place not decided. Louis Flader, Commissioner, A-1446 W. Van Buren St., Chicago, Ill.

International Trade Composition Association—Wm. E. Lickfield, Executive Secretary, 629 Chestnut St., Philadelphia, Pa.

National Graphic Arts Education Association—June 29, July 1, 2, Hotel Hollenden, Cleveland, Ohio. Fred J. Hartman, Educational Director, 412 National Savings and Trust Bldg., 719 Fifteenth St., N. W., Washington, D. C.

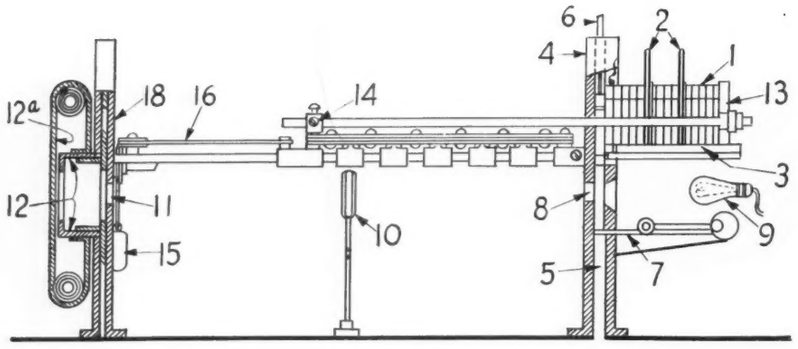

Fig. 2

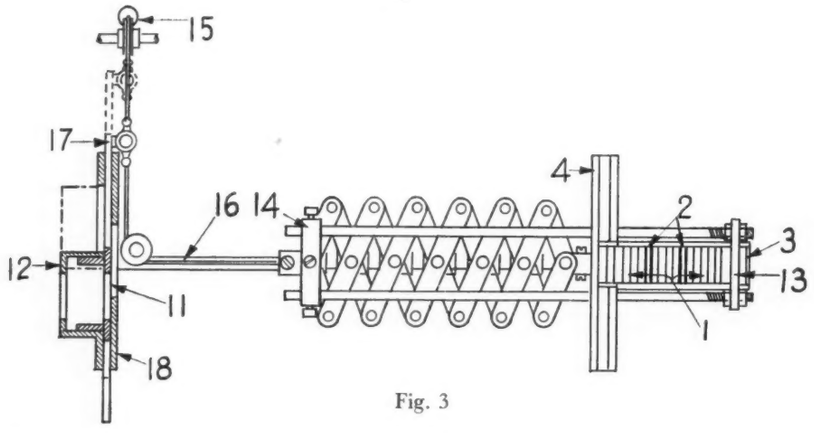

Fig. 3

Figs. 2 and 3.—In Fig. 2 is shown a diagrammatic side and partly cross-sectional view of means for separately and successively photographing the negative letter character inserted broadside in each matrix body as shown in Fig. 1. Fig. 3 is a diagrammatic representation, top plan view of the same device. This mechanism is illustrated and described in Patent No. 2,231,924 issued to Walter Koller and assigned to Intertype Corporation. In this design, note that the light source, matrix exposure position, the lens and camera shutter remain in fixed position during exposure of each matrix.

In the two diagrams:

1 *is the matrix line.*

2 *represents the spacers (spacebands).*

3 *is the channel for sustaining the justified matrix line.*

4 *is the fixed left wall of vertical channel* **5.**

6 *is representative of a reciprocating matrix ejecting blade or pusher which, in Fig. 2, has partially pushed the first matrix downwardly where it will come to rest upon the reciprocating escapement or ledge*

7 *which escapement supports the matrix while its negative letter character is being exposed to the sensitized film,* 12a.

8 *is the aperture in vertical channel* 5. *Matrix* 1a *rests on escapement* 7 *with its negative letter character opposite the aperture to permit passage of light rays.*

9 *is the light source.*

10 *represents the adjustable lens.*

11 *is the camera shutter aperture.*

12 *is the casing containing sensitized film* 12a *wound on spools or rolls which is slidable horizontally a distance equivalent to each letter character as it is exposed to the sensitized film.*

13 *is the follower which urges the entire justified matrix line* 1 *toward the left as the ejector blade* 6 *pushes each leading matrix* 1a *downwardly into channel* 5.

14 *is the cross-tie connected to follower* 13 *by two rods.*

15 *is the weight attached to cross-tie* 14 *by cord* 16. *As each leading matrix is discharged into the channel* 5 *the weight exerts sufficient pull to cause follower* 13 *to push the remaining portion of the justified matrix line to the left so that the next succeeding leading matrix will come to rest against fixed wall* 4, *at which time the leading matrix will be ready for discharge downwardly into channel* 5.

17 *is bracket attached to camera casing* 12, *the object of the attachment being that when the matrix line moves to the left the amount of the thickness of each displaced matrix, the camera casing containing the film will move a like distance to expose a fresh area on the film for the next letter character in the matrix line.*

The cross-tie 14 *is adjustable so that when connected to any intermediate joint of the lazy tongs, each advancing movement of the follower* 13 *will produce a proportionately greater movement of the lazy tongs joint to which the cord* 16 *is connected. Consequently, the light-sensitive surface of film* 12a *connected to the cord will also be moved through a greater distance.*

contained in a supporting channel is presented to suitable apparatus for carrying out the step of photographing the characters one-by-one taken from the composed line. Such apparatus is not associated with any form of complete machine or mechanisms for handling the line prior to or after the actual photographing operation.

Film Remains Stationary

By one method, the matrices are displaced singly and successively from the composed line and brought to progressively advanced photographing positions. In this case the sensitized film remains stationary and the progressive photographic positions to which each matrix (together with the lens and light source) is moved when displaced from the line are determined each anew by the body thickness of the particular displaced matrix. This is accomplished by interconnections between an oscillating displacement lever and a line follower. At each swing of the lever in the matrix displacement direction it meets a stop connected to the follower and advances the latter whereby to close up the space left in the line by the removed matrix and at the same time establish the limit of swing of the lever necessary to bring such matrix exactly to its proper position for photographing.

The Film Advances

By the other method, the principles of which will be discussed here, the matrices are displaced singly and successively from the composed line and brought in turn to a common photographing position. After each photographic exposure the sensitized film is advanced an amount equal to the body thickness of the particular displaced matrix. This is accomplished by a line follower which constantly presses the line endwise in its supporting channel and is connected to the holder containing the sensitized film.

The Apparatus

In figures 2 and 3 there is represented the form of apparatus for carrying out the second method referred to above. Here the composed matrix line *1*, justified by the sliding wedge spacers *2*, is supported in a horizontal receptacle or channel *3*. The spacers, which function similarly to a regular line-composing machine spaceband, are arranged to expand by downward sliding of the long wedge although it is understood that the more common upwardly driven style of spaceband is equally adaptable for use in this or a somewhat modified apparatus.

The line of matrices is constantly pressed endwise to the left in the channel *3* to bring the left end of the line firmly against the fixed left wall *4* of the upright channel *5*. A reciprocating blade or pusher *6* serves to displace downwardly into channel *5* the leading matrix brought against wall *4* by virtue of the endwise pressure referred to. Such displaced matrix falls onto the reciprocating escapement or ledge *7* where it rests

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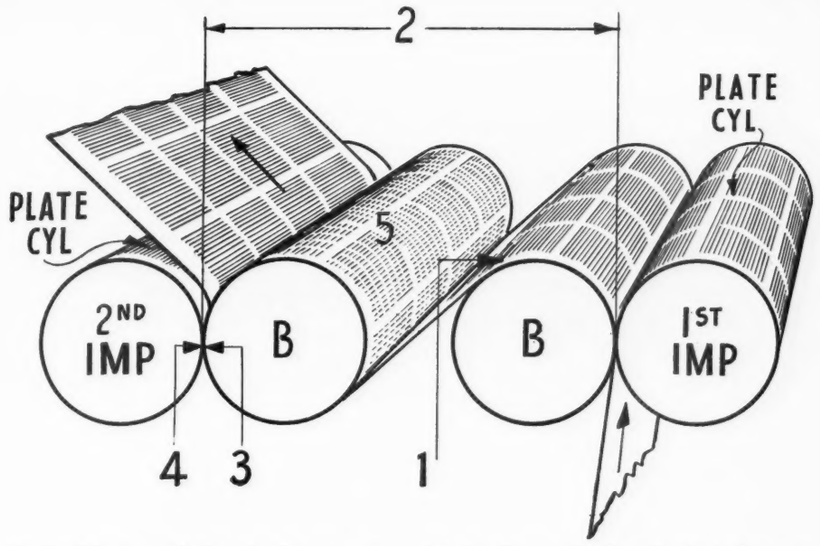


Fig. 2—Diagrammatic view showing arrangement of rotary newspaper press printing unit with first and second plate and impression cylinders. In newspaper collect run production on a double width press, four pages are printed from four plates in one operation on one side of the web, as at 1. *This is called first impression printing. The paper web then passes between a second pair of plate and impression cylinders for printing four pages on the other side. This is called second impression printing. Thus it will be seen that eight complete pages (four on either side of the web) are printed in one operation through the unit.*

Now, the drying interval permitted by the passing of the paper web between the first and second impression points, indicated at 2, *is of extremely short duration. In fact, on some of the older presses there is a distance of approx. 45 in. between the contact points of the two pairs of cylinders. In modern newspaper presses (using the same newsprint and oil-base inks) this interval is lengthened to about 5 ft. but the distance in effect, is about the same because the web travel has been stepped up to 1400 ft. per min.*

The presses are fitted with cylinders of certain diameters and web tension adjustments so that the first impression printing pattern 1, *as it passes between the second impression cylinder at* 3 *and the plate cylinder at* 4, *will not only travel in consonance with the impression cylinder* 5, *but the first impression printing* 1 *will at all times match the complementary offsetted ink on the second impression cylinder blanket* 5 *to avoid spreading the offsetted ink on the blanket beyond the printed pattern on the first impression pages.*

To minimize the offsetting of ink from the cylinder blanket 5, *newspaper press blankets are made with a highly slick surface to which ink does not readily adhere. It is a part of the skill of the pressman to maintain these adjustments so that the pattern on each first impression page will match repetitively its offsetted pattern on the second impression blanket.*

publishers' worries about reprints and corrections. It should also end the general scramble by advertisers for second impression positions."

For the benefit of the uninitiated, we will state that news inks dry mostly by penetration. With the universally used wood pulp paper stock which greedily absorbs the oil base in present news inks, this absorption of the oil makes possible rapid printing of newspapers. But this virtue also is a fault (and a grievous one) because while the paper absorbs the oil, it is done so willingly that the oil penetrates clear through to the other side of the sheet, causes a noticeable stain, and mars the appearance of the printing. This is called strike-through.

Another bane of good newspaper printing is called offset. This is caused by the second impression plate cylinder pressing against the sheet immediately following the printing of the opposite or first impression side of the sheet, the ink upon the first printed side not having had time to dry either by oxidation or complete absorption of the oil base in the ink so as to render it offset-proof when the second impression is made on the opposite side of the sheet.

Aside from these major troubles, other and annoying little devils beset the pressman in printing a newspaper. Old Man Smudge contributes his share of defacement to a well printed sheet by causing the not-yet-dried-ink to spread as it passes over various pipe rollers which guide it through the press. These troubles may plague the pressman operating the older type of press to a greater extent than the fellow fortunate enough to be operating a press of the latest type. Nevertheless, strike - through defaces newspaper printing irrespective of press age.

In the past few years the newspaper press has been redesigned and is now manufactured in such manner that it is well nigh a precision mechanism. This

WATER-BASE CARBON INKS, *developed*

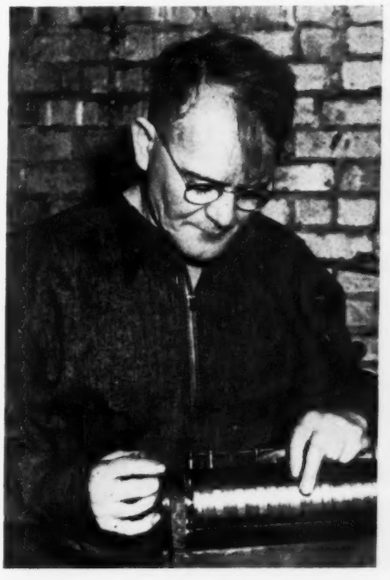
by West Virginia newspaper pressroom executive, said to eliminate strike-through and first impression offset

IT NOW appears that strike-through and offset, the two major curses of newspaper printing, may soon be eliminated from the pressroom. Several other beneficial effects are also expected to be realized as the result of the development of a water-base carbon ink. While developmental work has not gone so far as to include the printing of an entire newspaper edition with the new ink, yet engineers, pressroom executives and many pressmen are enthusiastically acclaiming the unqualified success of the water-base carbon inks fathered by Pressroom Superintendent Auburn Taylor (he of pants putteroner fame) of the Charleston (W. Va.) *Gazette*. It is admitted that there are a few bugs to be worked out yet, but these are not deemed insurmountable.

Mr. Taylor has been delving into the mysteries of a non-oil base newspaper printing ink for a period of perhaps two years or more. For some time he has had the assistance of a chemist. The pressroom of the *Gazette* has served as Mr. Taylor's laboratory.

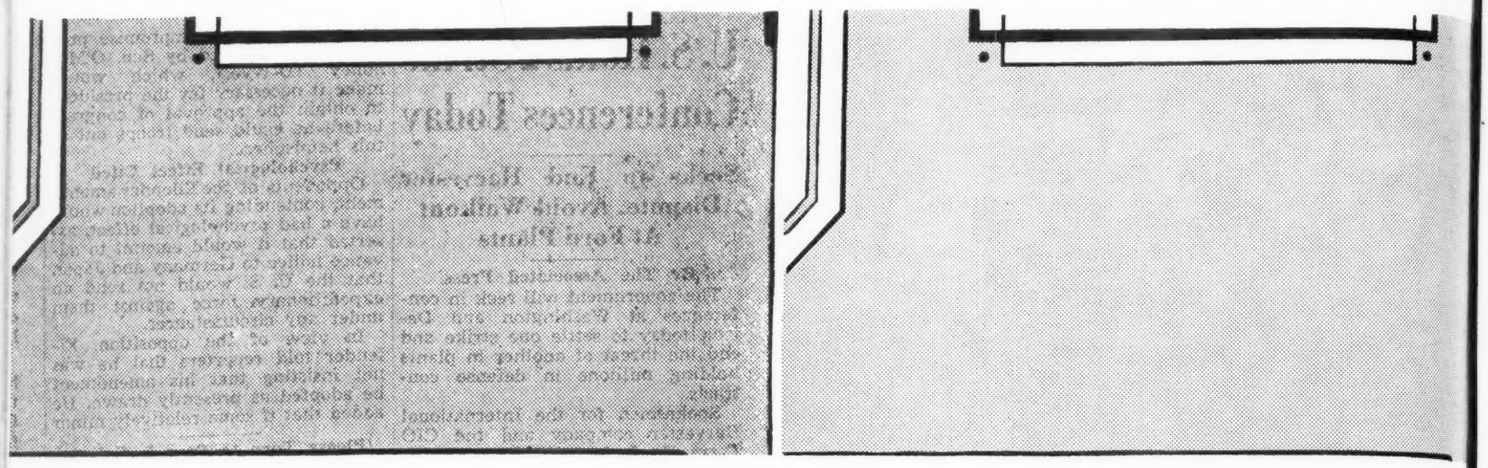
Mr. Taylor gave a demonstration run early in April at the *Gazette* plant. Among those who witnessed the demonstration were Vice President Arthur Dressel of R. Hoe & Co., Inc.; Wm. B. Edmondson of General Printing Ink Corp.; Chief Engineer Wm. F. Huck of the Hoe Co.; Director Fred Hudson of the International Printing Pressmen & Assistants' Union, and Pressroom Superintendent Walter Ogden, of the Cleveland *Press*.

"While practical application of the ink to newspaper pressrooms generally may be a year or so in the future," said Mr. Ogden, "the answer to elimination of strike-through and offset may be here. The method should mean an end to the



Constantly likes to see if it can't be made to work better for newspaper printing, does Charleston (W. Va.) Gazette's Auburn Taylor.

Fig. 1.—Graphic comparison of first impression newspaper printing from identical section of stereotype plate printed during experimental run. It is only fair to state that an extremely aggravated case of strike-through was selected in the oil-ink printed specimen at the left so as to secure as much comparative value as possible in these zinc reproductions. The original specimen at right was printed with water-base carbon ink under same conditions as the oil-ink sample. Regular inking apparatus was used during the trial run mentioned in this article.



refinement in manufacture has been accompanied by greatly increased production speed. A few years ago, an hourly production of 32,000 papers per hour was a common thing. Today the newer presses are printing upwards of 50,000 complete papers per hour. This means that the paper web travel through the press has been stepped up from 1000 feet per minute to as high as 1400 feet per minute.

Accompanying the manufacture of presses on a precision basis, rollers, blankets, bearings, automatic tension devices and flying pasters have been employed and perfected to keep pace with the increased production speeds.

To minimize the effects of offset, cylinder blankets are now being made with durable super-slick surface to minimize the offsetting effect of the not-yet-dried first impression ink when the second impression plate cylinder presses the paper against the second impression cylinder blanket. Automatic tensions now hold the paper web of sufficient tautness so that the first impression printing pattern strikes successively the same place against the blanket when printing second impression.

With all these major improvements there yet remains the strike-through problem, and on older presses the problem of offset from first impression printing. It is along these lines that Mr. Taylor has been working. He reasoned that if the oil in the ink cannot be made amenable to one-side printing, the thing to do is to get rid of the oil-base ink and substitute a vehicle which cannot penetrate from one side of the sheet to mar the printing on the other side.

Reportedly not containing any oil whatever, the water-base carbon inks eliminate strike-through because even if the water in the ink does penetrate through to the opposite side of the sheet it is not noticeable to the reader. Offset is eliminated because of the ready absorption of the water by the paper and the quick setting of the carbon pigment.

It seems that in order to use the new inks to full advantage on newspaper presses, it will be necesssry to redesign the inking mechanism to some extent. The new ink seemed to go into a state of solidification shortly after the ink distributing roller motions are stopped. While not an exact comparison, it can be stated that the aniline inking mechanism supplies sufficient ink to the plate with one fountain roller. It is thought that with the water-base carbon inks the yardage in the ink distributing mechanism can be reduced greatly. Perhaps two form (or plate) rollers, three distributor rollers and one fountain roller will be sufficient to provide continuous distribution, or one fountain roller provided with a doctor blade and two form rollers may be sufficient to insure constant flow of ink to the plates. Rubber form rollers seem to be satisfactory. These details, however, remain to be worked out.

REPORTED PROPERTIES OF WATER-BASE INKS

Those who have seen pages printed by Auburn Taylor of the Charleston (W. Va.) Gazette *with the water-base carbon ink make the following observations:*

(1) *Strike-through is eliminated*

(2) *Offset is eliminated*

(3) *No offset or smudge on the fold where two printed surfaces come together*

(4) *First and second impression printing are alike*

(5) *Sharp type printing*

(6) *Perfect dot printing in halftone highlights*

(7) *Open spaces in pages are clear*

(8) *Moisture penetrating the paper from the ink helps to eliminate static electricity in the press*

(9) *Flying ink is greatly minimized*

Gannett Bowling Tournament

One of the noteworthy inter-organizational endeavors is that conducted by employes of Gannett Newspapers. The eighth annual tournament was held in Rochester on April 26-27. This event was the largest tournament yet held by the Gannett Group.

Prizes offered for bowling excellence consist of $35 top money; three 5-man team prizes of $20, $15 and $10 in Classes A, B and C; $10 each for high single game in each class; $5 individual prize for high single and high three in each class. A total of 72 teams (360 bowlers) participated.

Production Manager Jack Burke of the Gannett Newspapers, tells us that 380 employes of the Rochester *Times-Union* and the *Democrat & Chronicle* during year previous to the tournament contributed 25c each per week to raise over $4000 with which to entertain their visiting fellow workers and guests from the Gannett Newspapers. Mr. Burke states that about 4000 persons are employed by the Gannett Group and between 500 and 600 attend the tournament each year at their own expense. We agree with Mr. Burke that these people do take their bowling seriously.

CUTS WITH HALFTONE DOT STRUCTURE

in highlights, middletones and shadows produced automatically on celluloid by heated stylus which is photo-electrically operated

WITH the warning that machines will not have been completed for the market for some time yet, G. Washington, Jr. stated that development of his photo-electric engraver for producing halftone cuts automatically on celluloid is progressing satisfactorily. Perhaps progress in perfecting the device may make it possible to place the device on the commercial market this year. No machines will be for sale until announcement has been made at a later date. A company to market the device is now being formed and will be known as G. Washington Electrochrome, Inc.

The photo-electric engraver operating by a.c. current only which produces the halftone cuts, has been developed by G. Washington, Jr., treasurer of the G. Washington Coffee Refiners Co., in Morristown, N. J. Mr. Washington's laboratory is in the basement of his Morristown home.

A photograph of the device is not available as yet but the following general outline will give the reader an idea of the principles of operation. While the machine still is considered by its inventor to be in the developmental stage, he stated it can be made to "engrave" a cut 10 in. by 14 in. maximum size.

Up to the present time, most of the inventor's work has been confined to producing cuts containing 116 line halftone screens, although it is anticipated that cuts containing screens ranging downwardly from 150 lines to 65 lines may be produced shortly. Cuts containing 116 line, 100 and 70-line screens have been produced experimentally.

It is expected that the cuts may be utilized in the magazine and newspaper fields and to some extent in commercial letterpress work. For cold molding in the stereotype process, experiments have demonstrated that the cuts will stand upwards of 800 T. molding pressure, which is in excess of stereotype mat molding requirements. Mr. Washington stated that as many as 15 dry mats have been molded under roller pressure from one cut without noticeably affecting the cut.

Description and Operation

The machine operates in conjunction with an electric eye scanning device. The copy from which a cut is to be made consists of a positive transparency of a negative. This positive is fastened at its edges by Scotch tape on the outside surface of a hollow glass cylinder 3½ in. diam. and 11 in. circum., by 14 in. long. The celluloid strip, approx. 0.015 in. thick, upon which the cut is to be "engraved" is fastened similarly with Scotch tape on a metal cylinder positioned opposite to and of the same size as the glass cylinder.

Once the machine has been adjusted for the particular cut to be produced and the positive transparency and the celluloid upon which the printing image is to be engraved have been fastened to the cylinders, operation of the machine is automatic.

To set the machine in motion, a switch operating on a.c. current starts revolving the two cylinders in unison. An electric eye scans the positive transparency which is excited by the light beam and sets up a small amount of energy in the electric eye. This energy, through suitable apparatus, is amplified, putting in motion a heated oscillating stellite tool or stylus which engraves the celluloid by thermo-decomposition.

Halftone Dot Formation

The oscillation of the stylus occurs at the rate of 360 cycles per second. Translated into machine production, halftones can be produced at the rate of 360 dots per second. The oscillation or vibration of the stylus is controlled electrically by means of a frequency generator. The stylus's rate of oscillation, in connection with the linear speed at which the celluloid passes the stylus, determines the dot spacing in the vertical rows. The number of vertical rows of dots per inch is determined by the speed of the carriage bearing the stylus parallel to the cylinder. The dot spacing in either direction can be predetermined and accurately controlled.

From the description of the "engraving" action and the shape of the heated stellite stylus point, it will be seen that the dot structure is pyramidal or nearly so, and that the interstices between the dots would be shaped like an inverted pyramid. Close examination with a magnifying glass of one cut indicates a slight distortion in portions of the dot structure. This, however, is not perceptible to the naked eye, but is apparently caused by the continuous rotating travel of the cylinder bearing the celluloid strip, while the stylus is being withdrawn from the celluloid — the withdrawal of the stylus not being sufficiently rapid to overcome a slight drag of the rotating celluloid against the stylus point.

It has been stated above that the glass cylinder upon which the transparent positive copy is fastened and the metal cylinder bearing the celluloid upon which the halftone is to be indented, rotate in unison. This is accomplished by connecting them with suitable metal gears.

The light source for projecting light rays *through* the positive transparency consists of a standard 6 v. lamp mounted on a bracket extending inside the glass cylinder. The light transmitted through the positive transparency varies more or less according to the tone values in the transparency. This light is picked up by a system of lenses and is then focused on the photocell. The light source and the lens system, during the making of a cut, move parallel to the axis of the glass cylinder which is rotating in a fixed position.

The round stellite stylus which indents the celluloid by thermo-decomposition is ⅛ in. diam. The end which contacts the celluloid is tapered to a point like a four-sided pyramid. The stylus and

(*Continued on Page 46*)

These two illustrations were printed direct from 116-line screen halftone cuts, made by the G: Washington Photo-electric Engraver. In the making of each cut, approx. 14 min. were required, exclusive of the mounting operation. By actual test, these halftone cuts measure approx. 0.005 in. in the highlights. It is expected that 65-70 line halftone screen cuts may be produced on the device shortly. Cuts may be printed from direct or may be reproduced in plate form by electrotyping or stereotyping. In the stereotype molding operation, it is said these celluloid cuts (metal-base mounted) will withstand pressures in excess of those required for any mat molding operation.

The Printing Metals Situation

ALL of the seven metals listed in the accompanying table are in more or less demand as National Defense metals and as such bear close watching by the printing industry for the duration of the present military emergency. The present situation is like this:

Aluminum, we have been advised, is on the priorities list and the shortage is critical owing to the unprecedented demand. No relief is expected until additional smelting capacity is available.

Antimony (American grade) is now being smelted from Mexican ores in our own country and the supply is more than ample for our needs. Antimony is not a defense metal.

Copper is on the priorities list and the demand is so great that Latin-American sources will be called upon to meet present needs. Prices are very stable, but be prepared for slow deliveries.

Lead is available without apparent limitation. Lead sources are numerous, especially in the United States and Mexico, hence no fear of shortage or drastic price increase.

Tin is assured our industries in sufficient amounts. It is estimated that a 15 months supply is now on hand with shipping space priority being given to this strategic metal from the Pacific. In addition, a tin smelting plant financed by RFC money will soon be under construction in Houston, Texas, to receive and smelt Bolivian tin ore. Price of tin is under control.

Zinc is a priority metal and the shortage is not being exaggerated in press reports, although the printing industry can be reasonably assured of access to this material to meet current needs.

Nickel is another priority metal and is greatly in demand for defense materials. Canada is the only available source of this metal and it is difficult to get any for non-defense needs.

In summation, our best advice is to build up three to six months reserve of the above metals or their alloys, but at all times avoid speculation and hoarding. Prices of these metals are well stabilized and it appears that ample supplies are available for current needs of the printing industry.

NONFERROUS METALS SMELTER QUOTATIONS

April 30, 1941 (100 lb. Lots)

Aluminum (94% + c. l. deld.)	$15.50
Antimony (bulk American)	14.00
Copper (refinery nominal)	11.875
Lead (E. St. Louis pig)	5.70
Nickel (99% electrolytic cathodes)	35.00
Tin (Straits spot pig)	52.00
Zinc (high grade slab)	8.25

These quotations furnished by *Daily Metal Trade*, Cleveland.

Information Please . . .

To feature program of Iowa Mechanical Conference — Board to sit in judgment on thorny newspaper problems

THE fifteenth annual Iowa Daily Newspaper Mechanical Conference will be held this year at Hotel Blackhawk, Davenport, Iowa, on Sunday, Monday and Tuesday, June 1, 2 and 3.

The program has been arranged by Guy J. Chappell, Iowa City *Press-Citizen*, president; Charles H. Bleuer, Davenport *Democrat*, vice president, and Paul Kamler, Clinton *Herald*, secretary-treasurer. Assisting with program arrangements was the executive committee, including Arthur Schmeichal, Muscatine *Journal*, in charge of the composing room section; Oscar E. Runquist, Clinton *Herald*, in charge of pressroom and stereotype section, and A. P. Ashton, Sioux City *Journal*, in charge of engraving section.

Herrick In Charge of Machinists

A session for machinists, will be held from 2 to 4 o'clock Sunday afternoon, June 1, in the composing room of the Davenport *Democrat* plant. All machinists are urged to attend the meeting and Each will have an opportunity to suggest questions or present problems for consideration of the meeting. Hoke Herrick, machinist for the Davenport *Democrat*, will be in charge and machines will be running and operators on hand for demonstrations. M. F. Dingman, machinist for the Cedar Rapids *Gazette*, will give a talk and demonstration on adjustments and maintenance of Mohr Lino saws.

Monday's Program

The convention proper will be called to order at 9 a.m. Monday, June 2. Guest of honor will be E. P. Adler, publisher of the Davenport *Times* and president of the Lee Syndicate of newspapers. L. M. Turnbull, business manager of the Davenport *Democrat*, will give an address of welcome.

Herman J. Ratelle will be in charge of a motion picture on the manufacture of paper, the film being presented by the Minnesota and Ontario Paper Co.

The Monday afternoon session will be divided into three group meetings. Charles H. "Tod" Bleuer will be chairman of the composing room session at which talks and discussions on various

Guy J. Chappell, Superintendent of Iowa City (Ia.) Press Citizen, *is President of Iowa Mechanical Conference.*

new features of composing machine equipment will take place. Taking part will be representatives of the Mergenthaler Linotype Co., Intertype Corp., Linograph Corp., Ludlow Typograph Co. and the Lanston Monotype Machine Co.

The stereotype and pressroom group will be presided over by Oscar E. Runquist of the Clinton *Herald*, and Mr. Shaw, chief technical engineer on metallurgy for the Metals Refining Co., will speak on "Flowability." William J. Nolan, field superintendent of the Goss Printing Press Co., will talk on "Getting the Best Out of Your Equipment."

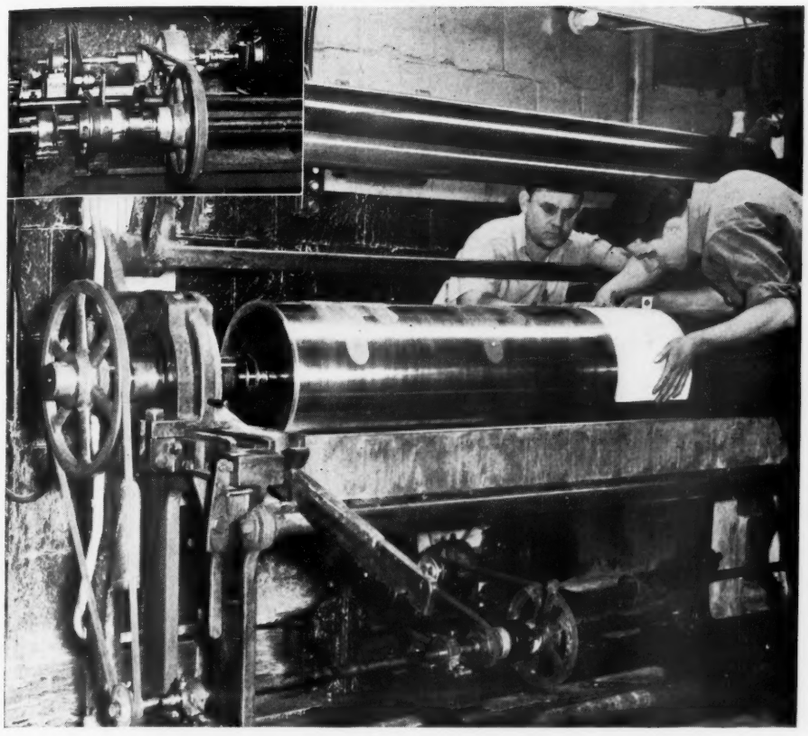
The engraving session will be in charge of A. P. Ashton of the Sioux City *Journal*.

The annual convention banquet, given through the courtesy of representatives of manufacturers and supply houses, will take place Monday evening at the Hotel Blackhawk.

Tuesday's Events

An "Information Please" board will feature the general session opening at 9:30 a.m. Tuesday. The board, composed of one member from each of the various mechanical departments of a daily newspaper, will assist mechanical executives in solving problems.

The board will be composed of Earl Anderson, composing room superintendent of the Rockford (Ill.) Consolidated Newspapers; Carl Bloomberg, chief machinist of the *Register & Tribune*, Des Moines; D. D. Curriden, engraving superintendent of the Minneapolis *Star-Journal;* Ross Devine, pressroom superintendent of the Davenport *Times;* Joe Tyler, stereotype superintendent of the Davenport *Democrat*. Ed Funk, composing room superintendent of the Waterloo (Ia.) *Courier* will be master of ceremonies.



Drive Cuts Roto Cylinder Developing Time

AT the Chicago *Tribune*, the developing time for rotogravure cylinders has been cut approximately in half by means of the installation of a two-speed drive, in place of the former single slow-speed drive on the *Tribune's* transfer and developing machines.

Previously, it had been customary to develop roto cylinders at slow speed only, but it has been found that better results in shorter time can be obtained if the cylinder is rotated at a higher speed. The new drive eliminates the necessity for spinning the cylinder at a higher speed when desired.

The slow speed of 25 r.p.m. is used when the paper supporting the carbon tissue is being softened until it can be peeled off. For developing duty, the cylinder is revolved at 130 r.p.m.

As is shown in the inset illustration, the two-speed drive consists of a motor, speed reducer, two V-pulleys each on the drive and the driven shafts, and a double-acting clutch between the two pulleys on the driven shaft.

A hand shifter lever is used to operate the clutch. By means of the double-acting clutch the slow or high speed drive can be engaged to drive the shaft. As will be seen in the illustration, a V-belt drive is used between the driven shaft and the cylinder shaft.

In the picture, Bert Maurer (left) and James Bussey of the *Tribune's* roto etching department are laying down carbon tissue upon a copper-coated rotogravure cylinder.

Additions to Spartan

Two additions to the ATF Spartan family, Spartan Black and Spartan Black Italic, are announced by Typographic Director Gerry Powell. Spartan Black will be available in 15 sizes from 8 to 120 point, while Spartan Black Italic is cut in the 12 sizes from 8 to 72 point. As in Spartan Medium and Spartan Medium Italic, the smaller sizes match the linotype versions of the two faces, for similarity between machine-set body matter and hand-set display.

Spartan Black and
Spartan Black Italic

Company Expands

An expansion program recently has been completed by The Flinker Ink Divider Company, P. O. Box 868, Cincinnati, Ohio. A larger downtown plant now houses the business and all of the old machinery has been replaced with new.

Gage Speaks

Harry L. Gage, Linotype vice-president addressed the Toronto Graphic Arts Association on *Letterpress Versus Offset* April 28. May 6 he spoke before the Springfield (Mass.) Advertising Club on *More Sales at Less Cost*.

Dexter Moves Offices

The Dexter Folder Company has recently moved its Service and Parts Departments to 431 W. Broadway, New York and 3225 Calumet Ave., Chicago. Sales offices will remain at 330 W. 42nd St., New York and 117 W. Harrison St., Chicago. Arrangements for rebuilding certain Dexter and stitcher machines have been made with Lanigan & Cross, 431 W. Broadway, New York and with C. F. Anderson & Co., 3225 Calumet Ave., Chicago.

Division Name Changed

The Erie Foundry Co., Erie, Pa., recently announced changing the name of its bindery division from the Invis'o Products Division to Lie-Flat Binding Division.

Color Booklets

General Printing Ink Corporation has published two booklets, 4 in. by 5 in. size. The booklets are entitled *The Psychology of Color* and *The Symbolism of Color*. Copies of the booklets are available upon request to the Corporation or any of its divisions.

New Linotype Cuttings

Mergenthaler Linotype Company announces several new matrix faces. Vice President C. H. Griffith states that with the completion of the 6, 8, 9 and 10 pt. sizes of Caledonia with Bold, the Caledonia series is now available from 6 to 14 pt.

HERE is a brief showing of 10-point Linotype Caledonia with **Bold. Modern man cannot be** served by a tool that is just good enough or a little better than

Modern Man Canno
Modern Man Canno

24 pt. Spartan Black Con. with Medium Con.

Lack RR NJ (D L & W).....	4	36¾	39¾
Morris & Essex (D L & W).....	3.88	23	24¾
N Y Lack & W (D L & W).....	5	49½	52½
Northern Cent (Penn).....	4	95½	98½
Oswego Syr (D L & W).....	4.50	33½	37
Pitt Ft W & C pf (Penn).....	7	175	178½
Pitt Yng & Ash pf (Penn).....	7	162½	..
Rensselaer & Sar (D & H).....	6.08	50½	54½

6 pt. Market Gothic

HERE is a brief showing of 7½-point Linotype Corona. Modern man cannot be served by a tool that is just good enough or a little better than pretty good. The good tool must do all that man can demand

In announcing 7½ pt. Corona with Bold Face No. 2, Mr. Griffith states: "This is a newspaper body type that provides maximum visibility, or color, and which at the same "The lower case characters of Corona have been designed for maximum height and all of its characters have been fitted to compensate for stereo shrinkage, so the face seems really larger than it is."

Horace Carr

LATE Saturday, April 12, passed one whose career seemed to be lifted out of an age long dead. He might well have lived and worked with the masters, Caslon, Bodoni, or Garamond. Horace Carr was recognized in all parts of the world as a master of the typographic art. Mr. Carr was a country boy. He was born on a farm near Erie, Pa. At a very early age he became intrigued with type, and went to work as a printer. At the Erie *Herald* he served his apprenticeship, in the same shop where Horace Greeley once worked.

Books were Horace Carr's most prized possessions; not rare, sophisticated first editions, but books that he gathered for the good that was in them. Mr. Carr had a meager formal education. In spite of this handicap he was highly educated, as the result of his driving desire to read all he could. Most famous of his collection are his dictionaries. These he used to gain accuracy when designing books or pamphlets to look as they would if they were printed hundreds of years ago. His old catalogs of type specimens and printing equipment would intrigue any printing executive.

Four years after Mr. Carr came to Cleveland, in 1889, he founded his own business, "The Printing Press." In this shop production never dominated. There were no deadlines. Work was finished and delivered only after it satisfied Carr, the master craftsman. A 627 page history compiled to 1918, for instance, was published in 1930. It was entirely hand-set in ATF Caslon 471. Carr loved Caslon. He set Caslon type as Caslon himself would have set it. In this he gained international fame. Large copies of his Lincoln's Gettysburg Address hang in schools and libraries from Pittsburgh to Palestine.

Above and below his little shop hummed presses geared to high production, but here was the peace and industry that has long since left printing plants.

The little bearded printer is gone but his spirit and the work of "The Printing Press" is being carried on by Mrs. Carr, August Dome and Frank Teagle, Jr., who worked with him, and have the same love for type that he had.

It is the hope of *Printing Equipment Engineer* that somehow, in some manner, appreciation for the aesthetic side of printing as exemplified by Horace Carr and other present-day masters may be blended with today's mass production trend in the industry so that printing will remain the Art Preservative of All Arts.

Speaking Schedule

Howard N. King, typographic consultant for Intertype Corporation, addressed the New Jersey Vocational and Art Convention at Asbury Park in March, the Buffalo League of Advertising Women, and the Cleveland Club of Printing House Craftsmen, in April. His May schedule included an address before the Craftsmen's Fourth District Conference at Allentown, Pa., the Oklahoma City Ad Club and the Oklahoma City Master Printers Club. May 15 he speaks before the Tulsa, Okla., Ad Club and Tulsa Master Printers Club. On the 16th there will be a joint meeting of the Fort Worth and Dallas Craftsmen's Clubs at Fort Worth, Tex., and on the 17th a combined meeting of Allied groups at Houston, Tex.

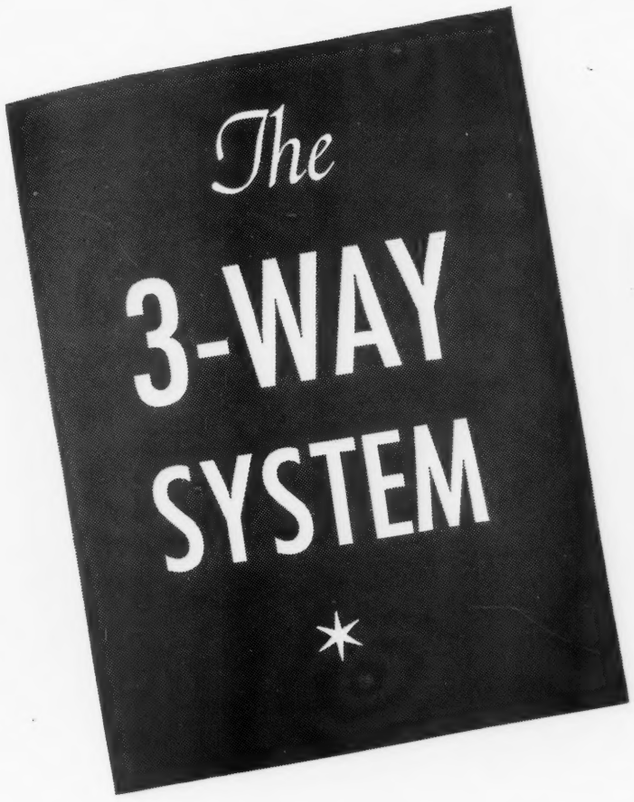
Basic Sheet Sizes

Bulletin No. R22-40, Simplified Practice Recommendation for basic paper sheet sizes has been published by U. S. Department of Commerce with collaboration of National Bureau of Standards. May be obtained from Superintendent of Documents, Washington, D. C. at 5c per copy. Standardization includes bond and writing papers, ledgers, book paper (including offset), index bristol and cover papers.

Printing Teachers Meet

Graphic Arts Education for the Common Defense will be the general theme of the 20th annual Conference on Printing Education which will be held at the Hollenden Hotel, Cleveland, Ohio, June 29-July 2, 1941 under the auspices of the National Graphic Arts Education Association.

Harry L. Gage, vice president of the Mergenthaler Linotype Company and chairman of the Advisory Council on Graphic Arts Education will give the keynote address on *The Place of Graphic Arts Education in a Program for Common Defense*. Others who will take part in the Conference program are: Dr. J. H. Mason, superintendent of Canton (O.) public schools; Thomas Roy Jones, president of American Type Founders; Charles R. Conquergood of the Canada Printing Ink Co.; Tom Land of the Masonic Home and School, Fort Worth, Texas; George Welp of the International Printing Ink Division of the Interchemical Corp.; Alfred Howell, directing supervisor of art in Cleveland public schools; Otto Ege, professor at Cleveland School of Art; Arthur E. Ormsbee of the Commonwealth Press, Grand Rapids Mich.; Harold H. Kirk, Langley Junior High School, Washington, D. C.; Glen U. Cleeton, Head of Printing Department, Carnegie Institute of Technology; Dr. Charles H. Lake, superintendent of Cleveland public schools; B. B. Eisenberg, past president, United Typothetae of America; Charles Schraff, president, Cleveland Club of Printing House Craftsmen; Thomas J. Martin, president of Cleveland Board of Education and vice president of International Typographical Union; Harry A. Porter, vice president, Harris-Seybold-Potter Company; Douglas C. McMurtrie, Ludlow Typograph Company and chairman of the educational commission of International Association of Printing House Craftsmen; R. Randolph Karch, principal, Printing High School, Cincinnati, Ohio; A. T. Stavaski, State Teachers College, California, Pa.; J. Henry Holloway, principal, The New York School of Printing, New York; John E. Fintz, directing principal, Special Schools and Vocational Education, Cleveland; Frank C. Moore, director of Industrial Arts, Cleveland; M. J. Eck, supervisor of Printing Education, Cleveland; and twenty printing instructors of the Cleveland Public School system.



An Exclusive

MONOTYPE FEATURE

The Monotype 3-Way System embraces all the operations involved in machine typesetting, the making of type, ornaments, piece borders, rules, leads and slugs and their use.

Each element of the Monotype System is complete within itself and in its application to the work for which it was designed, and each element may be combined with any other or with all other elements to meet fully the requirements of any composing room.

MACHINE TYPESETTING—The Monotype Typesetting Machine sets type in all sizes from 4 to 18 point in measures up to 60 picas. Straight matter, tabular and intricate work, ruled forms, rule-and-figure work—in fact, all kinds of typesetting—are done with unequalled facility and speed. No other machine embodies within the scope of its operation so wide a range of typesetting, such versatility in its product, nor contributes so much to improvement in the quality of typography and of printing.

TYPE AND MATERIAL—Under the Monotype System, new type, decorative material, rules, leads, slugs and metal furniture are made in unlimited supply for use in hand composition, and at a cost so low that non-distribution becomes an economy as well as a convenience. Under these conditions the highest possible efficiency prevails and low production costs inevitably follow. New Monotype-cast type reduces make-ready time and assures the highest quality of presswork. Monotype faces aid materially in producing good typography for good printing.

MAKE-UP AND IMPOSITION—In the make-up of pages and in the imposition of forms, the slugs and leads provided by the Monotype System are of inestimable value. This material, cast in any desired length, is "precision" material in every sense of the word—being absolutely accurate in height and point size. It is available in whatever quantity needed, in strips of any length or automatically delivered cut to labor-saving sizes, ready for immediate use, or for storage to provide for such emergencies as may arise.

YOU CAN USE THIS 3-WAY SYSTEM; WRITE TO US FOR FULL DETAILS

LANSTON MONOTYPE MACHINE COMPANY

Twenty-fourth and Locust Streets — MONOTYPE REGISTERED TRADE-MARK — Philadelphia, Pennsylvania, U.S.A.

Set in Monotype Garamont, Stylescript and Twentieth Century Family

Fitting Pre-lubricated Bearings to Line-Composing Machine Motors

By LESLIE J. GRINER*

*Mechanical Superintendent, Youngstown (O.) *Vindicator*.

AT the time of overhauling the Emerson electric motors used for driving some of our line-composing machines, we now substitute pre-lubricated armature shaft bearings so that it is no longer necessary for the composing room machinist to oil the bearings at regular intervals as is customary with the sleeve type. Previously, when overhauling the motors, it has been found advisable in some instances to replace the armature shaft as well as to install new ring oiler sleeve bearings.

Fig. 1 — View of inside housing bell of Emerson line-composing machine driving motor. The white line on the hub shows the approximate place where the hub is to be sawed off and discarded to make room for the socket head which supports ball bearing for armature shaft in place of the sleeve type bearing. This is the only alteration required in the motor frame parts.

Our electrician, Al Chagnot, decided to change the motor bearings from the sleeve to the ball type. To do this, the motor is dismantled. To provide room for the socket which is to support the ball bearing, a section of the inside housing bell casting hub is cut off and discarded. This is the only alteration in the motor frame. The white line in the inside housing bell, Fig. 1, clearly shows the approximate position for cutting off the hub.

One socket is made from cold-rolled steel for each bearing as shown in the diagram, Fig. 2. The armature shaft is then turned down to fit the bore in the ball bearings.

The pre-lubricated double seal ball bearings do not require oiling, are protected from dirt and from loss of lubricant by a metal seal. Bearings with the permanent metal seals rather than the conventional seal were selected because of the siphoning of lubricant caused by the felt seal absorbing the oil, in which case the bearings would become dry. Replacing the sleeve bearings and the armature shaft cost about $10. After the bearings have been converted to the ball, the bearings can be replaced easily at a cost of $2.60 per pair. We used Fafnir bearings, Type 202-LL.

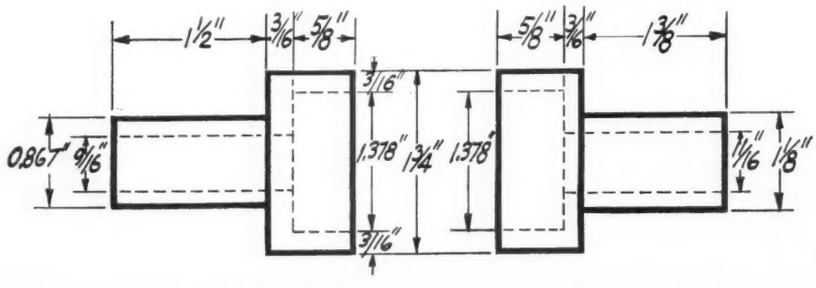


Fig. 2 — Diagrammatic plan view showing specifications for making sockets to support motor armature shaft ball bearings. The sockets are turned from cold-rolled steel. At left is outside bearing socket which has a 9/16 in. bore for armature shaft clearance. The right-hand diagram shows inside bearing socket with 1/2 in. bore.

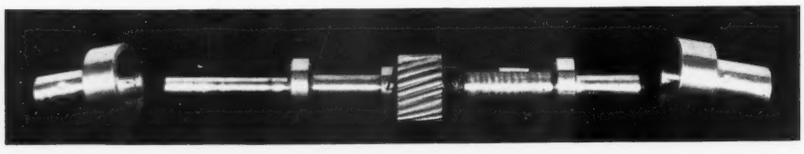


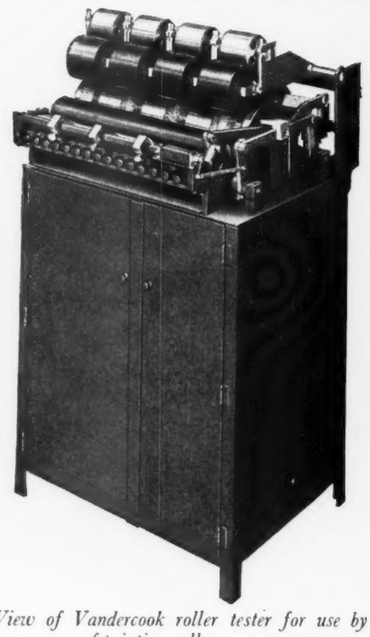
Fig. 3 — View of motor armature shaft assembly with turned-down shaft to receive Fafnir pre-lubricated double seal ball bearings and the cold-rolled steel sockets which support the bearings in the motor.

M-H Universal Process Machine

Illustrated 4-page bulletin has been published by Lanston Monotype Machine Co. In it is described the M-H Universal Process Machine, for use in offset-lith and photo-engraving multiple image (step and repeat) plates for printing by either lithography or letterpress, in one or more colors.

Vandercook Roller Tester

Vandercook & Sons announce the Vandercook Roller Tester. This device will test eight rollers at one time using four different inks. Rollers to be tested must be made up on special cores provided. Rollers may be up to 5 in. diam. with 4 in. face. Ink is transferred by a ductor roller from one fountain to the cylinder representing the form. The ink is taken off this cylinder by another ductor roller which transfers the ink to a second fountain. In this way *fresh* ink is constantly supplied to the rollers being tested. This feature is essential in order to obtain a true test of the effect of certain inks on the rollers being tested. The cylinder runs up to 800 ft. per min. surface speed and has ruled, screened, and solid sections to give the rollers a wear test.



View of Vandercook roller tester for use by large users of printing rollers.

The Vandercook Roller Tester weighs 900 lbs. and requires a floor space of 28 in. by 32 in. It is driven by a 1½ h.p. motor.

Complete information on the Vandercook Roller Tester may be obtained by writing the manufacturer.

New Specimen Booklet

The Ludlow Typograph Company recently issued an abridged specimen booklet. Bound with a printed and laminated cover, this 96 page booklet opens flat. It has both an alphabetical and numerical index arranged for ready reference. Included are 69 complete showings of all sizes and series of the more recent typefaces produced by Ludlow, together with one-line showings of 60 other Ludlow faces, advertising figures up to and including 240-pt., the newer borders and ornaments and special matrices, and food-store logotypes for grocery composition.

Copies of the booklet are available to those writing on their business letterhead to the Ludlow Typograph Company.

"SO JOE'S THE NEW FOREMAN! How Come?"

"Well, sir—Joe's a careful worker and uses his head—gets his presses running in a hurry and turns out mighty good work without a lot of lost time. He's been pretty smart in picking his inks, too. Uses Wotta Blacks on everything and says they've licked offset and other ink problems completely—that all has a lot to do with Joe's efficiency."

Joe's like hundreds of pressmen who have found that these quick-drying, no-offset, non-scratch, extra mileage inks save a lot of time, worry and grief.

REMEMBER *They're Guaranteed!*

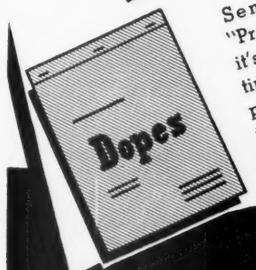
You can try Wotta Blacks without investing a penny. If you're not fully satisfied we'll refund every cent you pay us.

Mail the Coupon for our FREE TRIAL OFFER OF

Wotta Blacks

FREE!

Send for booklet "Pressroom Dopes"—it's full of valuable tips on solving ink problems. No obligation—just write on firm letterhead.



E. J. KELLY CO., 1908 N. Pitcher St., Kalamazoo, Mich.

You've got to show me! What about that FREE TRIAL OFFER for Wotta NO OFFSET Inks.

Name .....

Address .....

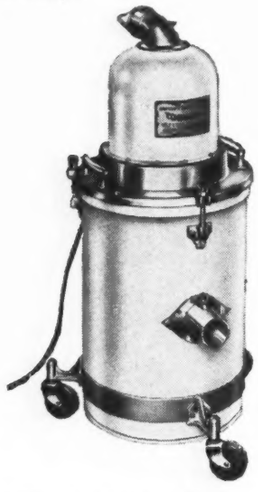
Firm .....

E. J. KELLY Company KALAMAZOO MICHIGAN

EQUIPMENT *and Supplies*

Noiseless Cleaner

A Noiseless Portable Vacuum Cleaner, known as the Tornado Noiseless Model 230, has been announced by the Breuer Electric Mfg. Co. Manufacturer states the feature of this machine is its combination of quiet operation, power and easy handling. The motor and fan noise has been reduced to a negligible factor. Only the sound of the air rushing through the nozzle and cleaning tools is audible a few feet away.



View of Tornado Noiseless Vacuum Cleaner for industrial cleaning duty.

The new device is designed for heavy-duty service and is equipped with a full horse power motor, mounted on grease sealed ball bearings which require no oiling. The multi-stage, turbine fan has ample suction for fast, thorough cleaning, and the large tank and filter provide plenty of space for dirt accumulation. The machine is light in weight (50 lbs.) so that it can be easily rolled about on its casters, or picked up and carried when necessary.

There is also available a wide variety of attachments for various types of industrial cleaning, among them the cleaning of walls and overhead pipes, removing dust, chips, and litter; and the cleaning of boiler tubes and boiler tops.

Ludlow Slugs May Now Be Cut on Rouse Band Saw

Ludlow slugs may now be sawed to pica measure on the Rouse Band Saw. For this purpose, H. B. Rouse & Co. provide a matrix (at center, Fig. 1) for casting the standard type of projection on the slugs and which is used as a guide in lining up slugs to sawing point on the Rouse Band Saw. Also provided as a slotted holder for holding the slugs while being sawed, as shown at the right in Fig. 1. A third item in the equipment is a galley (shown at left in Fig. 1) in which the holder may be accommodated while slugs are being proved on a proof press.

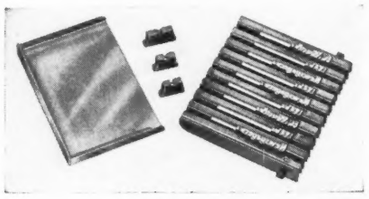


Fig. 1.—In center are shown three Ludlow matrices which are used for casting a projection on slugs. This projection is similar to the projection cast on Intertype and Linotype slugs by means of a hole in the left-hand vise jaw. The Ludlow projection matrices are assembled in the stick with a line of matrices in the regular manner. At right is shown the slotted slug holder which supports the slugs while being trimmed on the Rouse Band Saw. At left is a galley in which the holder is placed while proving the slugs on a proof press.

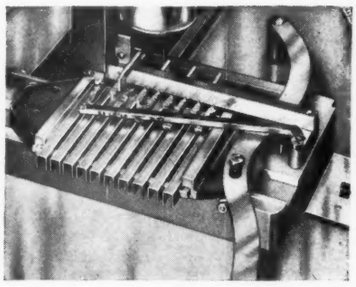


Fig. 2.—Rouse Slotted Ludlow Slug Holder in position on work table of Economy Model Band Saw. Here the slugs are aligned to variable measure before cutting. The hand-operated lever replaces the automatic feed of the larger band saw models.

The device may be used on both Economy and Master Model Band Saws.

In Fig. 2 is shown the Ludlow Slug Holder in position on the work table of Rouse's Economy Model Band Saw. The hand-operated lever replaces the automatic feed of the Master Model. It will be seen that by lining up the Ludlow slugs with the hand-operated lever and the projection cast on each that variable measures may be selected automatically.

Hoe's New Direct Pressure Press

The 800 T. Direct Pressure molding press announced by R. Hoe & Company is designed primarily for the molding of newspaper forms, for molding color forms in register, and for rubber plate molding. The platen size is 28 in. by 32 in., and the maximum working area is 26 in. by 30 in.

This machine is streamlined in design. All moving parts including the motor, pump and electrical equipment are housed under the front and rear tables for protection from dust and dirt.

The frame of the press is fashioned in one piece from steel. The ram is a steel casting 28½ in. in diam. The pressure pump is direct connected to a 7½ h.p. motor.

The machine will develop 800 T. max. pressure at full 2¼ in. stroke in approx. 8 sec. Stroke is adjustable and can be reduced so that at 550 T. pressure, and approx. 1½ in. stroke, the molding time may be reduced to approx. 6 sec.

Work tables at both front and rear are attached to and aligned with the moving platen, 38 in. above the floor.

A heat-treated and ground form sliding plate, suitably scribed with lines facilitates placing the form. The plate slides on anti-friction bearings into position under the anvil and is manually con-

Standards To Be Established For Non-Offset Spray Mixes

EFFORTS to start an educational campaign on the proper use of non-offset spray equipment and to establish minimum standards of quality and content with respect to spray mix, initiated some months ago by Secretary-Treasurer Edward Neway, of New York Printing Pressmen's Union No. 51, have culminated in the formation of a manufacturers' group, to be known as the Graphic Arts Spray Manufacturers, which will cooperate with the union and will extend the campaign nationally.

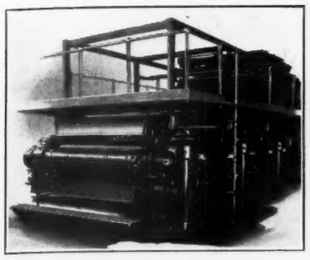
Equipment and supply concerns that have already joined the group include American Type Founders; Beach Nonpareil Compounds, Inc.; Binks Manufacturing Co.; Craig Corporation; Delany & Co., Inc.; Paisley Products, Inc.; Triangle Ink & Color Co., and S. M. Weatherly.

The new organization is headed by H. R. Callahan (Paisley Products, Inc.) as chairman. Vice Chairman is Fred R. Hacker (American Type Founders) and secretary-treasurer is James E. Kendrick (New York Employing Printers Association). Offices will be maintained with the New York Employing Printers at 461 8th Ave., New York.

The immediate work of the association will be to establish minimum manufacturing standards for non-offset spray mix which will assure the elimination of all toxic or injurious ingredients. Mixes now being marketed by member companies are being analyzed by an independent laboratory and will eventually be subject to informative labeling approved by the group. Plans are being considered for country-wide distribution of educational material both on the correct use of spray equipment and on spray mix standards, as well as for educational lectures to operator groups. National organizations of master printers and pressmen will be asked to cooperate.

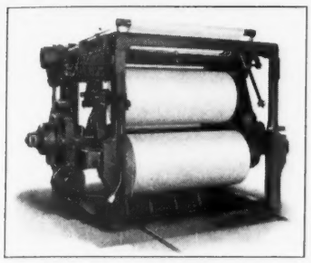
FIVE WAYS

to improve a newspaper



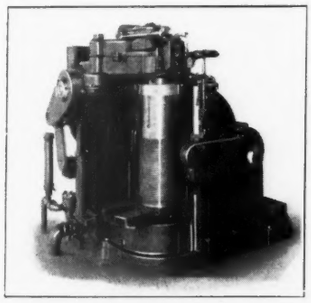
1 THE WOOD STEEL PRESS

Believing that a newspaper press should be an extremely long-term investment, this Company introduced all-steel press construction. The splendid service of Wood Steel Presses now in use proves the soundness of this Wood policy.



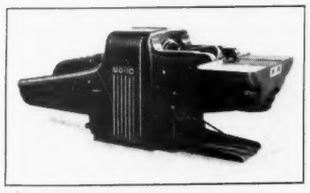
2 WOOD FULL-SPEED AUTOPASTER

Greatly increased production, without increased running speed. Later starts, earlier finishes. Less newsprint waste. Better printing (resulting from uniformity of press operation). And, finally, successful experience . . . nearly 500 Autopasters in service.



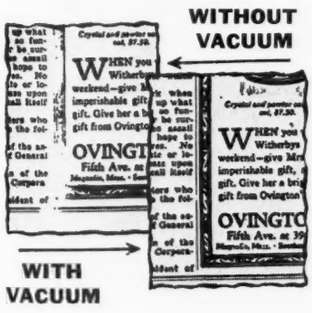
3 WOOD AUTOPLATE MACHINES

For mass production, the Automatic Autoplate, which produces four plates a minute. Equally well liked in their fields are the Junior and Pony Autoplates (Standard and Heavy-Duty). All models insure good plates and dependable operation.



4 WOOD HEAVY-DUTY AUTOSHAVER

Another profitable machine for the metropolitan newspaper, built for the hardest service. Both roughing and finishing cuts are employed in shaving each plate . . . and plates can be shaved a second time without removal from the arch.

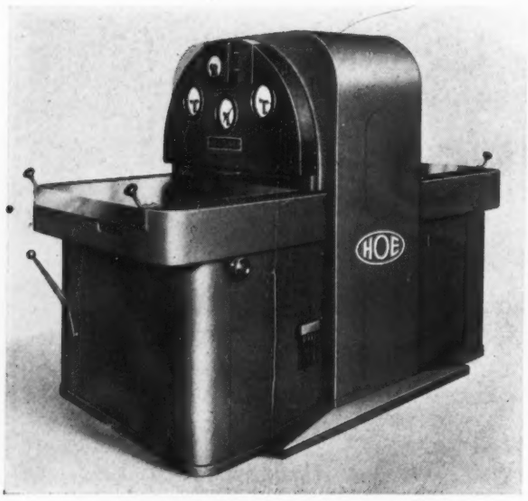


5 WOOD VACUUM EQUIPMENT

Applicable to Automatic, Junior, and Standard and Heavy-Duty Pony Autoplate Machines, new or old. Promotes cleaner printing of type and pictures, and blacker solids. Prevents mat creeping and banishes light spots due to buckles in the mat.

WOOD NEWSPAPER MACHINERY CORP'N

Plainfield, New Jersey • **New York Office: 501 Fifth Avenue**



View of R. Hoe & Co.'s streamlined 800 T. hydraulic molding press. Designed for molding newspaper mats, and for molding color mats with accurate register. May also be used for rubber plate molding at lower pressures. Maximum working area is approx. 26 in. by 30 in.

trolled. An additional form sliding plate may be installed at the rear of the machine, in which case the sliding plates are interconnected with suitable limit switches. The press is inoperative until the sliding plate definitely has been pushed into position under the anvil.

The press can be furnished for cold-molding, or for electric or steam heating in the lower platen, or in both lower platen and anvil. Electric heating in the platen or anvil can be independently controlled within a close differential by indicating temperature controllers having a range from zero to approx. 400 deg. F.

The heated machine is equipped with metallic non-compressible insulating material. During the time the press is off pressure, the heated platen is lifted away from this insulating material to further reduce transfer of heat to the ram. Manufacturer states this insulating method assures a perfect and parallel impression at all times.

Unless otherwise specified, controls consist of push-button station for starting and stopping the motor and a lever control for operating the ram. This method, states manufacturer, gives the operator a sensitive control of the machine especially in the lower pressure brackets when it is desired to operate the press for molding rubber plates, at which time pressures in excess of 350 T. are not required. When full automatic control is ordered, push-button station with *raise*, *stop* and *lower* are provided, as well as with provision for automatic holding pressure, in addition to the lever control mentioned above.

Weight of the press is approx. 16,000 lbs. Total overall height is 65 in. Floor space required is about 52 in. by 92 in.

Improved Cutter

The Challenge Machinery Company, Grand Haven, Mich., has added another improvement to its Diamond Power Paper Cutter by equipping the latest model with a redesigned safety paper guard.

This device closes the opening in the left side frame to prevent narrow cuttings from jamming under the knife bar. The automatic action of the sliding stop saves the stock from damage.

The guard fits snugly into the groove in the arch, so that stock may be placed flush against it. As the knife bar descends, the paper stop slides down, keeping its contact with the beveled edge of the knife and completely closing the opening in the side frame. Cuttings are forced outward on the front table and cannot possibly jam under the knife bar. When the knife bar returns to the starting position the safety paper guard slides back up to its normal position.

For its Diamond Power Paper Cutter, Challenge has redesigned the safety paper guard. Narrow opening in side frame is closed, thereby preventing narrow cuttings jamming under knife bar.

Vibrating Paper Jogger

The Syntron Company has announced the Vibratory Paper Jogger which will jog uneven sheets of paper into smooth, even stacks without the monotonous work of lifting and dropping the paper and patting the top edges as is necessary when done by hand.

The vibrator is made up of a cabinet with a cushion-mounted hardwood deck or table top, underneath which is a noiseless pulsating electro-magnet vibrator. Vibrating at 3600 vibrations per minute, tremors are imparted to the table top to cause the paper to flow smoothly and easily down into place.

View of Syntron Vibrating Table Top Paper Jogger. Tremors at the rate of 3600 per min. are imparted to the flat top.

The operator takes as many sheets of paper as can be held in the hands, stands them on edge on the vibrating deck top, riffles them to provide an air space between each sheet and the vibration causes each sheet to flow down into place. The operator then turns the stack 90 deg., and smooths down the ends.

A knee switch starts and stops the vibrating motion.

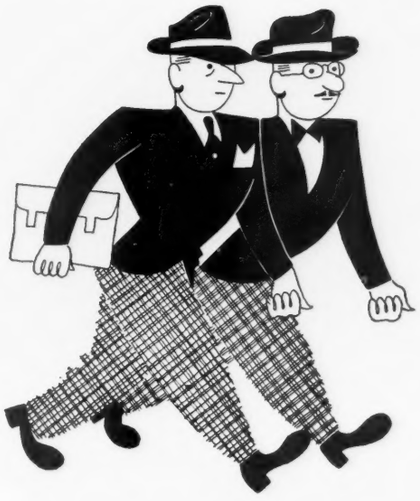
There is an entire absence of mechanical parts, the vibrating action being purely electro-magnetic.

There are three models, one of which is a low table model with 14 in. by 20 in. table top. Another model shown in the accompanying illustration, is a floor cabinet type, also having a 14 in. by 20 in. table top while the third is a floor model with a 28 in. by 40 in. table top for large sheets.

Economy Model Band Saw

H. B. Rouse & Company recently announced the new Economy Model

Hammond FLASHES FROM LIFE



they came!..

they saw

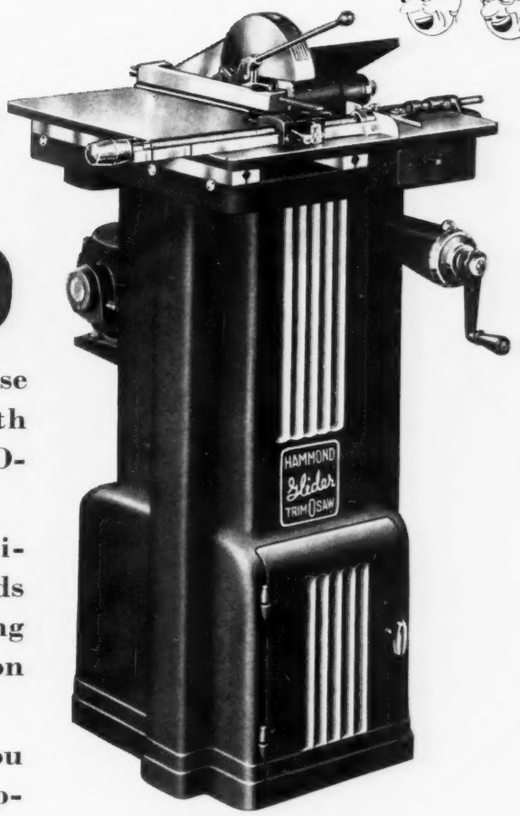
they bought

HAMMOND

Naturally . . . because Hammond's smooth flowing Glider TrimO-saw has everything!

Roller bearing micrometer gauge . . . single action clamp that holds from 8 points to 42 picas . . . quicker saw raising . . . PLUS the Hammond ball bearing table action that makes sawing faster and easier.

You can expect a Glider to do everything you want a saw to do . . . and you won't be disappointed. WRITE today for literature that gives you the whole story graphically.



HAMMOND
Glider TrimOsaw

Hammond of Kalamazoo

HAMMOND MACHINERY BUILDERS, INC.
1604 DOUGLAS AVE. • • • KALAMAZOO, MICHIGAN
Eastern Branch – 71 West 23rd Street, New York City

Band Saw developed especially for the smaller printer. The mechanism for feeding the slugs to the saw blade is hand-operated.

The method of slug length selection is the same as on the Master model. Slugs may be all one length or many different lengths. They may be cut to one pica or fractions of a pica without setting gauges or changing clamps. The Economy Rouse Band Saw does the same work, although the capacity is less than that of the Master model.

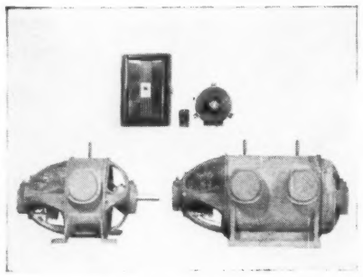
The saw will take the output of several line-casting machines. The actual speed of cutting the slugs is the same as on the Master model. The operator does not have his hand near the cutting blade while placing the slugs on the machine or during the cutting operation. The Rouse Economy Band Saw will cut Linotype, Intertype, or Ludlow slugs.

Complete information may be obtained by writing the manufacturer.

Adjustable Speed a.c. Drive

Designed especially for aniline, letterpress and offset fanfold and multi-color rotary presses and boxboard press applications requiring smoothly adjustable speeds over wide ranges with constant torque, in locations where only a.c. supply is available, a new 10-to-1 adjustable-speed drive, which uses a series circuit without the usual exciter, is announced by the Westinghouse Electric & Manufacturing Company. It is available in ratings from 1 to 15 h.p. with a standard speed range of from 175 to 1750 r.p.m., for 2- or 3-phase operation on 220, 440, 550 v., 60 cy. systems.

The new drive has five parts, including control; (1) a single-unit motor-generator set, consisting of a squirrel-cage induction motor driving a series d.c. generator which supplies operating voltage for (2) a d.c. series motor coupled to the driven load. In parallel with the generator series field is (3) a rheostat which controls the driving motor speed. Control apparatus consists of (4) an across-the-line starter for the squirrel-cage motor, and (5) a pushbutton station.



The new Westinghouse adjustable-speed a.c. drive. These five units form the complete drive including control. No exciter is required.

High-torque characteristics of the d.c. series motor are combined with the flat-speed properties of the shunt motor to give good speed-torque characteristics.

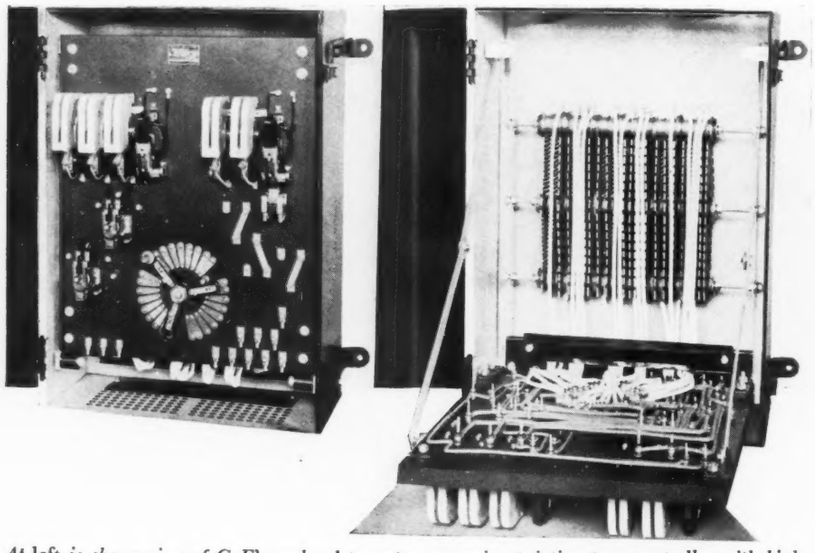
Optional features include dynamic braking, and inching. Dynamic braking requires no external braking resistor, but employs a braking field wound right into the motor. Horsepower ratings are based on top speed of 1750 r.p.m. at 40 deg. C. continuous operation. Open frames are standard; splashproof and totally-enclosed frames are available.

Tilting Panel Controllers

A tilting panel that may be dropped 90 deg. is an outstanding feature of a new General Electric line of preset speed and remote preset-speed job-printing-press controllers.

Applicable to many types of presses in the book and job printing industries, the new controllers are available in ratings from 3 to 40 h.p., with preset speed points ranging from 16 to 27 speeds. They may be operated on either alternating or direct current, and on 2- or 3-phase power systems.

The tilting panel is one of the design features incorporated in the new line to provide accessibility for inspection and maintenance of all wiring, studs, and resistors behind the panel by removing two holding bolts and lowering the panel. The controller's deep door is so designed that the panel is flush with its enclosing case—thus making the contactors and relays on the front of the panel accessible from all sides when the door is open.



At left *is shown view of G-E's enclosed pre-set nonreversing printing press controller with high torque feature. The wiring panel is hinged at the bottom, so the panel can be tilted forward 90 deg. for servicing, as shown at the* right. *Maximum rating is 5 h.p., 220 v., 2- or 3-ph., 60 cy. Cabinet is approx. 30 in. high.*

Three New Waverley Sizes

Three additional sizes of the Waverley series have been cut by Intertype Corporation during the past month. These include 8, 10 and 14 point, duplexed with Italic as shown below. A booklet showing the complete series will be sent upon request.

THIS PARAGRAPH is set in the eight point size of WAVERLEY, a new Intertype face, and is combined with *Italic and* SMALL CAPS. $1234567890 *$1234567890*

THIS paragraph is set in the ten point size of WAVERLEY, a new Intertype face, and is made with *Italic and* SMALL CAPS. $123456

THIS paragraph is set in 14 point WAVERLEY, a new Intertype face, and is combined with *Italic and* SMALL CAPS. $1234

Increases Size Range

The size range of the Ludlow system of producing composition by casting slug lines from hand-set matrices has now been increased to include complete fonts of both 4 pt. and 96 pt. The specimen lines show 4 pt. (Special) Caslon Light, and 96 pt. Tempo Bold Condensed. The 4 pt. is cast with a 4 pt. Ludlow mold to set solid. The 96 pt. is cast with the regular 12 pt. Ludlow mold from 1½ in. matrices set in a special 1½ in. matrix stick.

Ludlow size range increased to include 4-point and 96-point

New

The 96 pt. specimen immediately above was reproduced from a Ludlow slug cast in the regular manner on a 12 pt. slug body from 1½ in. matrices set in a special 1½ in. matrix stick.

The line at the top of this box was cast from Ludlow's new 4 pt. matrix font. The mold casts 4 pt. body.

Full information regarding the new typesizes and specimen showings are available on request to the Ludlow Typograph Company.

What Good is a DICTIONARY?

Yes, what good is a dictionary if it isn't used? It contains a wealth of information, yet if we don't look up words and their meanings we continue to misuse them, or we mispronounce them. The same principle holds true in the printing plant. A mechanical executive can carry around in his head a great deal of wrong information on printing equipment and supplies unless he takes the trouble to look up correct information in the Seventh Edition of the Printing Equipment Catalog published by PRINTING EQUIPMENT *Engineer.*

This book contains the greatest collection of technical information on printing equipment and supplies that has been published in the last fifteen years. It tells who makes what. It gives the equipment and supply items used in every department, who makes or sells them, trade names, and a wealth of technical data right at your finger tips, which can be turned into dollar-and-cents savings for your department.

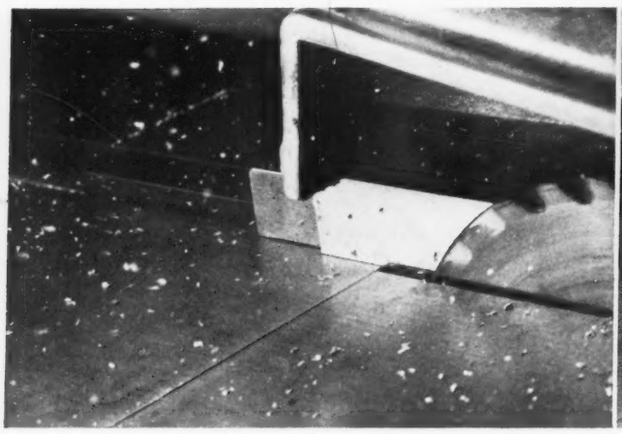
Keep this Catalog handy. Use it constantly as a source of information. When you want manufacturers' catalogs or price information on equipment and supplies, send in the postage-paid blue card in the front of this Catalog and we will see that the manufacturer sends you the information you want.

If it's Printing Equipment and Supplies . . . you'll find it in

THE SEVENTH ANNUAL EDITION OF

THE PRINTING EQUIPMENT CATALOG

Flying Metal Chips from Saw-trimmers Eliminated



"HOW simple! Funny, it hasn't been thought of before." This expression is the usual reaction when one hears about the solution for a previously taken-for-granted annoyance, even though arriving at the solution may have entailed a great deal of thought. Flying metal chips from composing room saw-trimmers is a case in point.

One of the annoyances in most composing rooms is the shower of metal chips thrown off by the saw-trimmers. To a degree, these are dangerous to passing compositors as well as to the saw operators. In addition, these chips not only nestle in chases and forms (if the saws are not enclosed in screened cages) but are scattered about the immediate floor area so as to contribute to untidy conditions.

Particularly is this true in cutting stereotype base metal and cast metal furniture. Various types of guards and other apparatus to confine the flying chips were used with no success on the Milwaukee Journal's *12 saw-trimmers. Finally, Composing Room Foreman Louis Gilg hit on what he thought was a solution.*

A study of the saws indicated that the chips flew, not from the blade, but from bouncing on the saw table top. He reasoned that were a semi-circular slot cut in the edge of the table top immediately opposite the teeth of the blade, the chips would follow through downwardly into the waste chute rather than bounce off the table top.

To test his theory, he called into action the Journal's *Stroboflash fast action camera. This camera operates on the stroboscopic principle; that is, action is instantaneously stopped by both the camera shutter and the stroboscopic light. It is this type of camera which is used to take pictures of a bullet going through a pane of glass, water from a faucet stopped in midair, etc.*

The Stroboflash flash camera showed that Louis Gilg's premise was right, and that the chips were in reality bouncing from the saw table as shown in the picture at the left. One of the saw tables was then notched as shown in the illustration at the right. A block of stereotype metal base was pushed through and the camera recorded the results. As can be seen, flying chips are almost negligible.

Since this experiment, all of the Journal's *saw-trimmer tables have been notched. The Milwaukee Saw Trimmer Company, manufacturers of the saw, is now making the notch standard equipment on all of its new units.*

While this simple improvement is important to composing room operation, the matter goes farther than just this single step. It proved the value of the Stroboflash flash camera in analyzing and improving industrial production units of all kinds. In fact, it offers the possibility of opening new fields for industrial engineers.

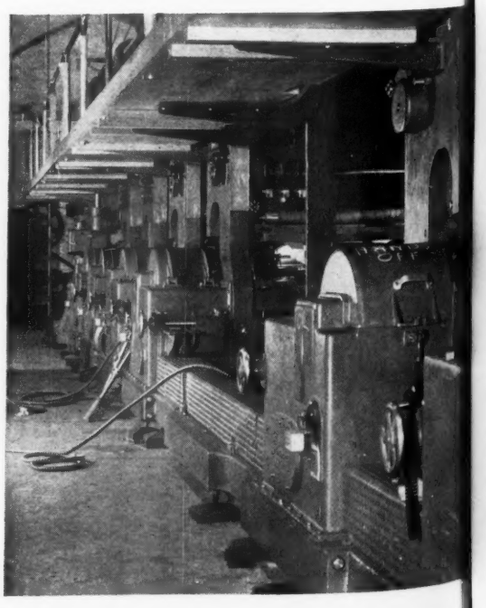
Composing Room Foreman Louis Gilg of the Milwaukee Journal *evolves the idea that flying metal chips from saw-trimmers are caused by rebounding from the table top, calls into action a Stroboflash flash camera to prove the point and solves the problem by cutting a semi-circular notch in the edge of the table opposite the working point of the saw teeth, so as to direct the chips downwardly into the waste chute.*

COLOR GRAVURE PRESS *shipped early in April by Babcock Printing Press Corporation to Neo Gravure Company in New York*

AMONG the recent important printing equipment shipments is that of the rotogravure color press manufactured by Babcock Printing Press Corporation and shipped to Neo Gravure Printing Co., Inc., New York, early in April. The press is now undergoing erection and will be used for printing gravure supplements for the New York *Times* and other publications.

The press is touted to print 960,000 magazine size pages per hour, four colors on one side and two colors on the other side of the paper. It will turn out pages in combinations of 8 to 48. By reason of automatic equipment the press may be operated continuously for 24 hours or longer periods. Top speed travel of the paper web through the press is 975 ft. per min.

This is the first rotogravure press to be manufactured in the Babcock plant and also is the first color magazine press built



by this company with General Electric automatic electric eye color register control. The press is 60 ft. in length, is 12 ft. high, weighs 135 T. and costs nearly $150,000 to build. It has been in process of construction for eight months.

Hydraulic Pressure Regulation

A feature of the new rotogravure press is the hydraulic mechanism for regulating printing pressure. This equipment operates automatically. When the press is stopped the impression cylinder pressure is released automatically so that the copper image cylinder continues in motion without making an impression on the paper. In this press the image cylinder is kept in motion to prevent drying of the volatile ink in the image recess. Cooling equipment has been incorporated in the press design to eliminate any heat which may develop in the printing and dyeing process. Folding equipment is stated to be particularly suitable to the high rate of production possible with the press.

96 Page Letter Press

With the completion of the rotogravure press, Babcock's personnel is now laying the bed plates for a 96 page, double-deck letter press for the *American Home* magazine. Production of parts also has been started for another rotogravure press. This press will be used in mail order catalog printing.

Reports Important Things

The Research Reporting Committee of the Cincinnati Craftsmen's Club has been reporting in bulletin form to club members a two-page duplicator printed bulletin entitled *Of Interest To Craftsmen.* These monthly reports are featured at the regular monthly educational meetings of the Cincinnati Club. The content of the Bulletin may be an announcement about a new equipment or supplies development, or literature which may be secured on some new paper development. Among other things discussed by the committee in the current issue A. L. Schneider writes about *Let's Build An Ideal Coated Paper.*

Lee V. Augustine of the Printing Machinery Co. is chairman, assisted by George D. Criswell, Malcolm Long, A. L. Schneider, Robert Thiele and Samuel Yates.

Craftsmen Plan Lake Cruise

The Fifth District of the International Association of Printing House Craftsmen will hold its annual conference aboard the S. S. Georgian sailing from Detroit, June 13 to Georgian Bay. According to Cruise Chairman George Glaeser, most of the accommodations have already been taken and the program committee reports an interesting and educational list of events. The Steamer Georgian will take the Craftsmen and their ladies through Lake St. Clair and Lake Huron to Tobermory, Ont., situated at the eastern end of Georgian Bay. The boat will return to Detroit, June 15.

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Letter To Pacific Coast Newspaper Executives

Dear Editor — For some time I have been mulling over the idea of holding an annual Pacific Coast Newspaper Mechanical Conference. Many of the Coast executives would like to attend the Eastern Conferences, but time and distance do not permit.

To find out if a Pacific Coast Conference is feasible, perhaps the Coast newspaper mechanical executives will drop a letter or card to the writer with suggestions or ideas they may have in mind. I realize some time would be required to organize such a meeting, but if enough interest is manifested, a first meeting could be held in 1942 — time and place to be decided later. If you as a West Coast newspaper executive are interested, please get in touch with me.

HARRY HALE, Engraving Superintendent,
The Portland (Ore.) *Oregonian*.

AUTO SPEEDOMETER *Converted into Tachometer for Indicating Production Speeds of Newspaper Press — Mileage Transposed into Papers Per Hour*

By HERBERT TAYLOR*

*Press and Stereotype Superintendent, Clarksburg (W. Va.) *Telegram*.

SOME time ago, it occurred to me it would be possible to convert an automobile speedometer into a tachometer for the purpose of indicating the running speeds of our press, which at the time of manufacture was not supplied with a printing-speed indicating instrument. A speedometer was procured from an automobile graveyard. It was desirable to select a speedometer with as large a dial as possible for easy visibility in the pressroom. This happened to be a speedometer taken from a Dodge 1935 model automobile. The writer will attempt to go into minute detail with respect to application of the instrument.

Without making any change in the speedometer, I found that at the regular speed of 24,000 papers per hr., the speedometer showed a reading of 30 mi. per hr. By having a weaker hairspring installed on the speedometer pointer, together with some added magnet, the speedometer dial showed a reading of 72 mi. per hr., while the press was printing 24,000 papers per hr. These adjustments in the speedometer were made before it was installed on the press.

To give the speedometer man an idea where to set the speedometer, first take a reading of the shaft where installation is to be made, with the press running at average speed. With this information he can set the speedometer hand at around 70 m.p.h.

To install the speedometer on the press, it will be necessary to provide a square hole in the end of the shaft opposite which the speedometer is to be mounted and which will be connected by cable to the speedometer. To provide the square hole in the shaft, secure an old magnet from a discarded speedometer. The shaft of the magnet used in this instance was ¼ in. diam. A section of the shaft approximately ⅜ in. back from the end was threaded with 28 threads per inch. The press shaft was then drilled with a No. 3 drill (0.2130 in.) and tapped with the corresponding tap (28 threads per in.). This shaft, by the way, must turn clockwise in relation to the speedometer when it has been mounted on the press.

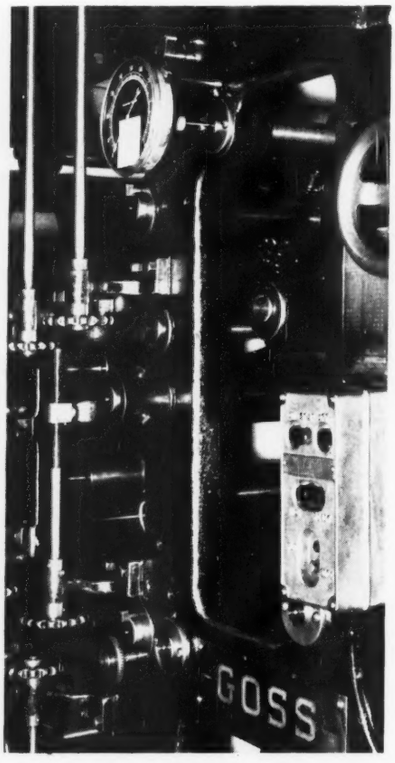

Fig. 1—View of section of press to which has been attached a 1935 Dodge automobile speedometer for indicating at what speed the press is being operated. This "tachometer" was devised by Press and Stereotype Superintendent Herbert Taylor of the Clarksburg (W. Va.) Telegram. *The readings are taken from a table compiled for the purpose (see Fig. 2). Speedometer miles have been transposed into papers per hour on the press.*

After the magnet shaft has been threaded as described above, and the proper size hole has been drilled centrally in the press shaft which will be used to operate the speedometer, the magnet shaft is screwed into the press shaft until tight. Then saw off flush with the press shaft. If the hole in the press shaft has not been tapped too deeply, the square hole in the magnet shaft will extend centrally from front to back of the section screwed into the press shaft. Into this hole or socket the square speedometer cable end is to be inserted.

The speedometer can now be mounted. First, remove the dial glass from the speedometer. Remove the two screws in the back which hold the works in the case.

With a ¼ in. twist drill, drill two holes in the back of the case to provide an outlet for the supporting screws. Then while holding the speedometer case against the press shaft, center the hole of the speedometer case with the drive shaft to which the other end of the cable is to be attached. Centerpunch the holes through which the two ¼ in. by 20 by 5½ in. long supporting screws are to pass. Use a No. 7 twist drill (0.201 in.) for this purpose. These two holes should be positioned so that the heads will not interfere with the speedometer works. Cut two lengths of ¼ in. pipe approximately 5 in. long. Secure a proper length of flexible cable squared at both ends. This cable is the standard type used on all automobiles and can be obtained from any speedometer repairman.

FIG. 2—TABLE SHOWING SPEEDOMETER READINGS IN RELATION TO PRESS SPEEDS

Mi. per Hr.	Papers per Min.	Papers per Hr.
21	200	12,000
43	250	15,000
52	300	18,000
62	350	21,000
72	400	24,000
82	450	27,000
92	500	30,000

Mr. Taylor states he intends putting a new dial in the automobile speedometer which will indicate the number of papers per hour at which the press is being operated.

It is now a simple matter to assemble the various parts on the press frame. Pass the long screws through the speedometer case, slide the pipe sections over the screws and turn up the screws to hold the case in position.

Attach the flexible cable to the shaft and the speedometer as in automobile assembly. Put the speedometer works back in the case and replace the dial glass.

In case the speedometer drive shaft is not in a position where it can be seen at all times, the speedometer can be mounted in any convenient place by using the longer cable as used in automobiles.

After installation has been made, to get a complete speed range, run press at the lowest speed possible, checking number of papers per minute and noting miles per hour on speedometer. The speed of the press can be increased at the rate of 50 papers per minute and tabulations made at each increase until maximum has been reached.

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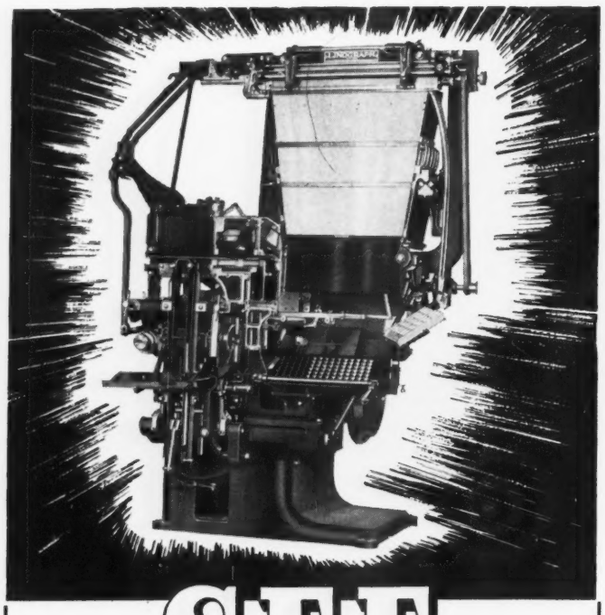

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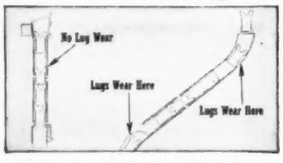

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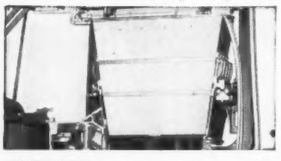
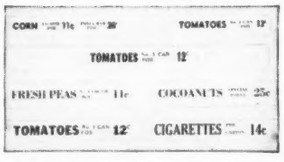


SEE DISPLAY ADS SET FROM ONE MAGAZINE



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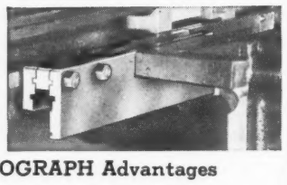

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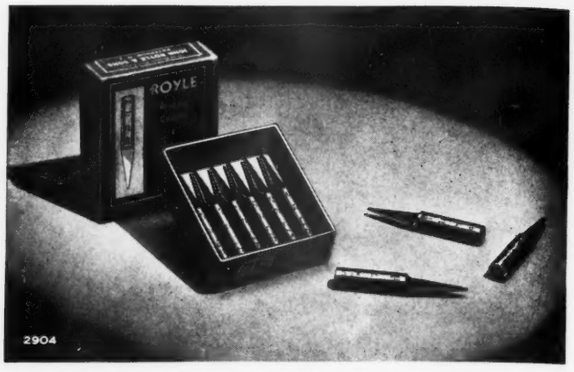

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PRINTING PATENTS REPORT

Covering Patents Issued March 25, April 1, April 8, April 15, April 22

This data is compiled exclusively for *Printing Equipment Engineer* by Invention, Inc., is verified in the United States Patent Office, and is comprehensive of all patents in the field of each heading continuous from the last published issue of this magazine. For copies of patents listed here, specify the patent numbers and send 10c each (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

Binding, Cutting, Perforating:

2,236,106. BINDING CLIP for securing individual leaves or signatures into book form. The clip includes a metal clamping structure, and as a novel feature special tongues to be inserted in slits in the stack of leaves. The clip is particularly useful for securing binding tape when hinged covers are to be provided. Invented by Walter R. Meier, Lincoln, Nebraska. Unassigned. Application June 29, 1938. 3 claims.

2,236,117. COVER for binding pamphlets and catalogs, comprising a single sheet forming integral back and side cover portions, the back portion having reentrant folds integrally united to form rigid multiply lateral extensions in the plane of the back. Since the back lies in a single rigid flat plane, titles and the like may be more readily displayed thereon. Invented by Albert A. Strauss, Pittsburgh, Pa. Unassigned. Application July 18, 1940. 4 claims

2,236,169. WIRE-TYPE BINDER for a plurality of marginally apertured stacks of sheets, characterized by continuous members extending for substantially the complete length of the back of the book and provided with extensions at various points along the back, each extension projecting into an aperture in one of the stacks of sheets. Invented by David M. Dunwoodie, Sr., Dayton, Ohio. Unassigned. Application April 29, 1939. 3 claims.

Composing Room Equipment:

2,235,980. STEREOTYPE CASTING BOX provided with a backing sheet within the casting chamber which is firmly held and uniformly stretched under variable tension. Invented by Alfons J. Bueltmann, Chicago, Ill. Assigned to Goss Printing Press Co., 1535 S. Paulina St., Chicago, Ill. Application May 11, 1931. 1 claim.

2,236,212. STEREOTYPE PLATE CASTING MACHINE, characterized by improved electrically driven pump mechanism for forcing the molten metal into the mold. Invented by William F. Huck, Richmond Hill, N. Y. Assigned to R. Hoe & Co., Inc., E. River & 138th St., New York, N. Y. Application December 4, 1937. 14 claims.

2,237,506. MATRIX GRINDING AND MARKING MACHINE, characterized by a novel system for conveying off the gritty particles resulting from the grinding operation so as to prevent them from coming into contact with working parts of the machine. Invented by John E. Sheaffer, Louisville, Ky. Unassigned. Application May 22, 1931. 12 claims.

2,237,610. COOLING ATTACHMENT FOR LINOTYPE MACHINES including not only means for cooling the mold cap, but also an arrangement whereby foreign particles may be blown away by means of compressed air from the cooling system. Invented by Russell M. Miller, Kenosha, Wis. Unassigned. Application July 5, 1940. 3 claims.

2,237,790. DISCHARGE NOZZLE ASSEMBLY for melting pots of type casting machines. The invention is particularly concerned with means for positioning the valve thimble of the nozzle within the melting pot wall. Invented by Jay T. Rogers, Indianapolis, Ind. Unassigned. Application February 28, 1940. 1 claim.

2,238,042. SPRING WIRE TYPE SET-UP HOLDING CLIP of improved construction said to eliminate danger of the clip working out during use. Invented by Theodore C. Edson, Orinda, Calif. Unassigned. Application April 23, 1940. 7 claims.

Feeding, Folding, Delivery:

2,235,844. SHEET FEEDING MECHANISM comprising a table for supporting a stack of sheets, a rotating spider carrying a take-up roller arranged to engage the bottom sheet of the stack as the spider rotates, mechanism for driving the spider and take-up roller, and a device for disconnecting the driving mechanism and damping rotation of the spider. Invented by Alexander W. Nelson, Belleville, N. J. Assigned to Robert F. Darby, Newark, N. J. Application April 21, 1939. 14 claims.

2,236,163. WEB SUPPLY MECHANISM of the flying paster type, for use with a web fed press of the flat sheet delivery class. The invention is characterized by electric control means for synchronizing operation of the web roll replenisher with the operation of the sheet cutter. Invented by Howard M. Barber, Pawcatuck, Conn. Assigned to C. B. Cottrell & Sons Co., Westerly, R. I. Application February 21, 1939. 20 claims.

2,236,164. WEB SUPPLY MECHANISM of the flying paster type, for use with web fed flat bed presses. The invention is concerned mainly with synchronizing mechanism for preventing the cutting of a sheet from the web at the unpasted tail, leaving a loose piece of paper which heretofore often choked the cutters. Invented by Howard M. Barber, Pawcatuck, Conn. Assigned to C. B. Cottrell & Sons Co., Westerly, R. I. Application February 21, 1939. 10 claims.

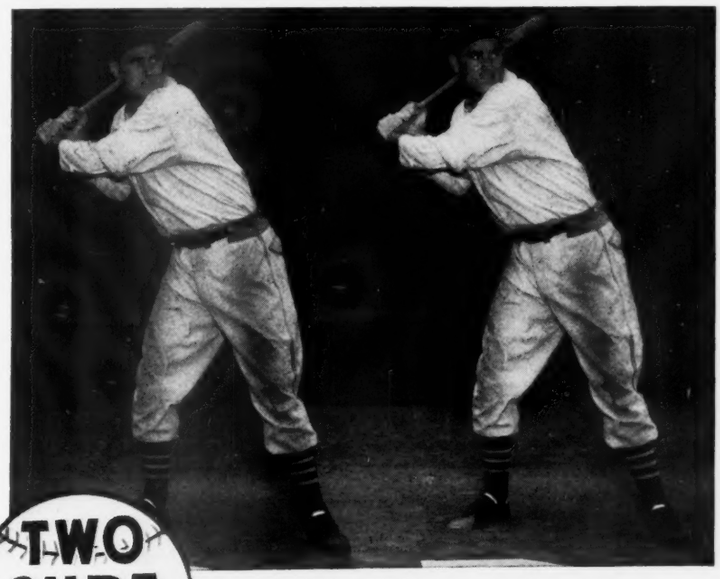
2,236,229. ROTARY FOLDING MECHANISM comprising a plurality of frame units, characterized by having the various folding and delivering mechanisms of the units assembled and mounted at the factory for shipment, all that is required at the operating locus of the press being to assemble the frame units together. Invented by Emory W. Worthington, Chicago, Ill. Assigned to Goss Printing Press Co., 1535 S. Paulina St., Chicago, Ill. Application March 28, 1939. 1 claim.

2,236,363. SHEET FEEDING MACHINE of the type for feeding sheets from the top of a pile, comprising rear suckers to grip the uppermost sheet and move forward, forward suckers arranged in front of the pile to grip the advanced sheet and move forward more rapidly than the rear suckers. Invented by Headley T. Backhouse, London, England. Unassigned. Application March 30, 1939. 7 claims.

2,237,472. PAPER FOLDING MACHINE characterized by a rubber roller and a cooperating steel roller, and mechanism for forcing paper against these rollers in such a manner that the rubber roller picks up the paper and moves it through the roll pass. Invented by Fredrick Brillas, New York, N. Y. Unassigned. Application October 5, 1939. 7 claims.

2,237,740. FOLDED SIGNATURE FEEDING APPARATUS of the type wherein the signature is placed across a swinging saddle which carries it to stitching position. The device is particularly concerned with feeding the sig-

(*Continued on Page 38*)



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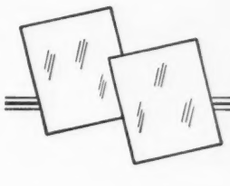

ZOMO ELECTRIC ZINC

A-Z ELECTRIC ALLOY

natures in such a manner that they are pivoted from horizontal to vertical in order to straddle the saddle. Invented by Oskar Kleinschmit and Walter Geissler, Leipzig, Germany. Assigned to Gebruder Brehmer, Leipzig, Germany. Application February 4, 1939. 9 claims.

2,238,009. FOLDING MACHINE characterized by an improved arrangement for mounting the folding rolls and buckle chutes so that adjustments may be more readily made and replacement of the rollers and chutes facilitated. Invented by Frank J. Breman, Oak Park, Ill., and Nils Trydal, Chicago, Ill. Assigned to Davidson Mfg. Co., 1020 West Adams St., Chicago, Ill. Application May 2, 1938. 3 claims.

2,238,010. STACKER with a novel arrangement for insuring that the signatures being fed to the stacker from a folding machine will always lie in overlapped relation on the stacker. Invented by Frank J. Breman, Oak Park, Ill. Assigned to Davidson Mfg. Co., 1020 West Adams St., Chicago, Ill. Application May 9, 1938. 18 claims.

2,239,118. SHEET DELIVERY MECHANISM of the type wherein severed sheets from a machine for converting webs into sheets are taken from a transfer or collection cylinder and delivered to a slowly moving delivery belt. Invented by Oscar C. Rosen, Scarsdale, N. Y., and Isidor Tornberg, Plainfield, N. J. Assigned to Wood Newspaper Machy. Corp., Plainfield, N. J. Application August 12, 1938. 4 claims.

Miscellaneous:

2,235,997. PRINTING INK for high speed intaglio or rotogravure printing, combining nitro-paraffines with certain petroleum naphthas as a solvent for use with gilsonite or the like. For example, the ink may comprise 33% by weight gilsonite, 62% petroleum naphtha, and 5% nitromethane. Invented by Clarence E. Irion, Montclair, N. J. Assigned to General Printing Ink Corp., 100 Sixth Ave., New York, N. Y. Application August 11, 1939. 2 claims.

2,236,239. COATING MACHINE for applying a suitable coating to metal sheets both before and after a printing operation. Provides novel adjusting and mounting arrangement for a scraper knife and an improved mounting and tilting mechanism for a pan disposed below the supporting roller of the coating machine. Invented by Morris Lipton, Rutherford, N. J. Assigned to General Printing Ink Corp., 100 Sixth Ave., New York, N. Y. Application April 23, 1937. 13 claims.

2,236,521. PRINTING INK comprising zein, a solvent therefor, linseed fatty acids, and a coloring agent. Invented by Roy E. Coleman, Meriden, Conn. Assigned to Zein Corp. of Amer., a corporation of Delaware. Application August 12, 1937. 6 claims.

2,236,724. PAPER RULING MACHINE designed to eliminate the heavy pen beam formerly employed, and to modify and lighten the pen clamp, which is secured directly to the usual rock shaft. Invented by Charles E. Clarke, Winchester, Mass., Robert T. Duffy, Boston, Mass., and Joseph W. Cloutier, Franklin, N. H. Assigned to Lindbladh Corp., Boston, Mass. Application July 31, 1939. 19 claims.

2,236,725. PAPER RULING MACHINE having a base slidably mounted in the machine frame, and a motor and pump arrangement for operating the mechanism for feeding sheets into the machine. Invented by Charles E. Clarke, Winchester, Mass., Robert T. Duffy, Boston, Mass., and Joseph W. Cloutier, Franklin, N. H. Assigned to Lindbladh Corp., Boston, Mass. Application (divisional) October 8, 1940. 6 claims.

2,236,726. PEN CLAMP for paper ruling machines, so constructed that pens can be inserted and adjusted while the clamp is in its operating position. Invented by Charles E. Clarke, Winchester, Mass., Robert T. Duffy, Boston, Mass., and Joseph W. Cloutier, Franklin, N. H. Assigned to Lindbladh Corp., Boston, Mass. Application (divisional) October 8, 1940. 6 claims.

2,236,754. PROCESS FOR PRINTING ON CELLOPHANE, providing improved means and method of drying intaglio ink deposits between colors by the combined use of radiant heat originating from a source on the side of the Cellophane opposite that upon which the ink is deposited, and direct heat supplied from rollers rotating in surface contact with the Cellophane. Invented by Irving Gurwick, Mount Vernon, Ohio. Assigned to Shellmar Products Co., Mount Vernon, Ohio. Application June 24, 1939. 4 claims.

2,236,346. METHOD FOR FORMING CONTAINER BLANKS of Cellophane or similar material, including the step of printing with the use of intaglio inks of spaced designs on a web of the material. Invented by Paul M. Gilfillan, Mount Vernon, Ohio. Assigned to Shellmar Products Co., Mount Vernon, Ohio. Application January 5, 1938. 5 claims.

2,239,623. PAPER SLITTING MACHINE of the type employing coacting cutters carried by parallel rotating spindles. Main feature of the invention is a novel method for securing the cutters in any adjusted position along the spindles. Invented by Charles E. Oster, Rochester, N. Y. Unassigned. Application February 19, 1941. 14 claims.

Plate Making:

2,236,000. METHOD FOR REGISTERING PRINTING PLATES in newspaper multi-color printing, involving use of means for automatically and graphically indicating on each proof that is pulled the exact relationship and spacing of the center ring contacting edge and the head bar contacting edge of the plate with respect to the type matter. Invented by John A. Koessler, John W. Koessler and Kenneth L. Koessler, Buffalo, N. Y. Unassigned. Application September 7, 1938. 7 claims.

2,236,458. PRODUCTION OF COMPOSITE POSITIVE TRANSPARENCIES containing both pictorial and line or type matter for use in production of photogravure or rotogravure printing forms. The invention proposes to produce opaque impressions of the type or line matter on a translucent carrier of "Cellophane," etc., to prepare a photographic contact print from the carrier, and combine by planning a paper negative of the pictorial matter with the paper negative produced from the translucent carrier, and photographing the resulting composite negative onto a sensitized transparent base. Invented by Stanley J. Verriour, Watford, England. Unassigned. Application May 31, 1939. 4 claims.

2,237,568. METHOD OF INTEGRATING PAPER TISSUE ON A PAPER OR OTHER POROUS BACKING, the product being useful as a vehicle for photographic or typographic impressions. The method comprises coating paper tissue with a gelatinous solution, opening the structure of the coated tissue by drying under bi-directional restraint, placing the tissue upon the porous surface, and wetting from above. Invented by Colin Landin, Washington, D. C. Unassigned. Application December 22, 1938. 1 claim.

2,237,704. VACUUM HOLDER FOR GLASS PLATE NEGATIVES in photocomposing or photographic printing machines, wherein the negative is air sealed and accurately registered with all air gaps presented to the press plates, in such a manner that embossing or indentation of the press plate is eliminated. Invented by William C. Heubner, New York, N. Y. Unassigned. Application March 29, 1939. 11 claims.

2,237,708. PROCESS FOR REPRODUCING NATURAL GRAIN PATTERNS by the steps of superposing a dot-screen transparency on the pattern to be copied, applying selective coatings over the light areas, printing a dot-screen ground over the entire surface of the coated transparency, removing the coated areas, inking the original pattern, printing therefrom on the transparency, and copying from the transparency as a positive. Invented by Charles M. Long, Detroit, Mich. Unassigned. Application June 3, 1937. 10 claims.

2,238,483. PALETTE FOR PREPARING CAMERA COPY in photo-mechanical processes, comprising a series of coloring materials in which certain of the materials have incorporated in them predetermined amounts of a material having known ultra-violet reflectivity to give them equal ultra-violet reflectivity. Invented by John A. C. Yule, Rochester, N. Y. Assigned to Eastman Kodak Co., Rochester, N. Y. Application (divisional) November 19, 1938. 10 claims.

2,239,386. PHOTOENGRAVING METHOD comprising the steps of preparing the surface of a plate with a suitable sensitized covering, placing a screened half-tone negative forward of and on the sensitized face of the plate, passing light rays through the negative onto the sensitized face of the plate, resensitizing the plate, replacing the negative forward of and on the face of the plate with the negative slightly shifted from its original position, again passing light rays through the negative onto the sensitized plate, washing the plate and finally etching it. Invented by Thorie N. Hoglund, Des Moines, Iowa. Unassigned. Application June 12, 1939. 4 claims.

Printing Presses and Equipment:

2,235,948. PERFORATING, SCORING AND PUNCHING ATTACHMENT for printing presses providing a corner cutting die which is flexibly mounted for wide ranges of adjustable positioning, so that it can be accurately set relative to the area to be printed and also relative to lines to be perforated or cut. Invented by Arnold J. Schwisow, Hopkins, Minn. Unassigned. Application August 26, 1939. 3 claims.

2,236,131. CROSSHEAD DRIVE for flat-bed travelling cylinder presses, whereby the usual large crank wheels and long pitman, ordinarily disposed above floor level, are eliminated. The invention, employing racks on the underside of the crosshead meshing with segmental gears operated by relatively short pitmans, is disposed below the floor level. Invented by James L. Blackley, Battle Creek, Mich. Assigned to Duplex Printing Press Co., Battle Creek, Mich. Application January 19, 1940. 8 claims.

2,236,146. PLATE CLAMPING MECHANISM characterized by being mounted on a reduced end of the printing cylinder, so eliminating the usuals lots heretofore provided in the cylinder for retraction of the clamping mechanism. Invented by Earl P. Lacure and Albert J. Carpenter, Jr. Battle Creek, Mich. Assigned to Duplex Printing Press Co., Battle Creek, Mich. Application June 19, 1940. 19 claims.

2,236,230. STEREOTYPE PLATE HOLDING AND TENSIONING MECHANISM wherein the plates are held and tensioned peripherally about the cylinder by means of powerful, resilient tension applied along the tail of the plate. Invented by Emory W. Worthington, Chicago, Ill. Goss Printing Press Co., 1535 S. Paulina St., Chicago, Ill.

2,236,805. INK FOUNTAIN CONVERSION DEVICE for printing presses which utilizes some of the conventional equipment of an elongated ink fountain to remove the pressure or doctor blade and to substitute an improved conversion unit. Invented by Ralph D. Plaisted, Los Angeles, Calif. One-third assigned to Ralph S. Plaisted and one-third to Frank H. Plaisted, both of Los Angeles, Calif. Application September 11, 1940. 3 claims.

2,237,026. PRINTING PRESS FEEDER whereby two sheets of the same or different sizes or colors may be printed at the same time. Invented by Fred J. Dietrich, Lemay, Mo. Unassigned. Application February 13, 1940. 5 claims.

2,237,349. IMPROVED INK APPLICATOR for use with intaglio printing machines providing means for uniformly overflowing ink against the downwardly turning side of an etched printing cylinder, regardless of the speed at which the cylinder is turning. Invented by Irving Gurwick, Mount Vernon, Ohio. Assigned to Shellmar Products Co., Mount Vernon, Ohio. Application August 3, 1939. 4 claims.

2,237,453. REGISTER MEANS FOR PRINTING PRESSES providing accurate registering mechanism which may be removed from positioning engagement or relationship with respect to the member of the printing couple upon fastening of the register means to the member. The device may comprise, for example, a rack for application to a member of the printing couple, temporary positioning means applied to the rack for maintaining it in operative positioning, and a device for permanently fastening the rack to the member of the printing couple. Invented by Joseph Sinkovitz, Brentwood, Pa.

(Continued on Page 40)

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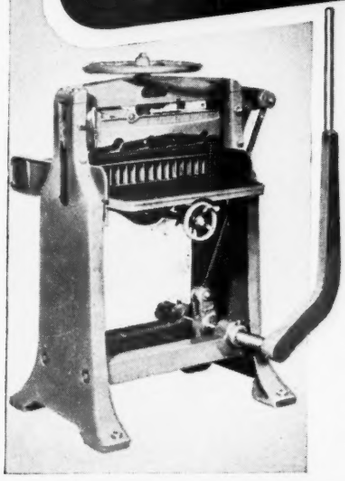

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Assigned to Printing Machy. Co., Pittsburgh, Pa. Application May 21, 1940. 20 claims.

2,238,050. WATER FEED FOR PLANOGRAPHIC PRESSES, comprising a dampening roller system, a source of dampening fluid, and means controlled by a member submerged in this source for increasing the depth of the source of fluid when desired, the increase in depth causing the fluid to contact the dampening roller system. Invented by John G. Goedike, San Antonio, Texas. Unassigned. Application April 12, 1940. 6 claims.

2,238,479. APPARATUS FOR PRINTING ORNAMENTAL DESIGNS ON TEXTILE WEBS, of the type wherein the design is first formed in color or printing ink on a continuously travelling web and modified to obtain the desired appearance, the continuously moving web then being brought into contact with the textile web to be printed. Invented by George E. Senseney, Ipswich, Mass. Unassigned. Application April 11, 1931. 2 claims.

2,238,898. INTAGLIO PRINTING MACHINE and process for manufacturing name markers and labels for clothing, personal linen, etc. The machine includes a flexible flat printing plate, operating on a rotary printing segment, for printing names, etc., with fast colors onto a continuous textile tape. Invented by Oscar Greenstein, New York, N. Y. Unassigned. Application June 7, 1938. 8 claims.

2,238,985. INTAGLIO PRINTING PRESS for printing dyestuffs on woven garment labels or on greeting cards. The press is of the type wherein a doctor bar scrapes the die after each inking of the die, and since the ink scraped off by this bar is salvaged, the invention effects material savings in ink. Invented by Arthur Rosenthal, Grand Rapids, Mich. Assigned to Rose Patch & Label Co., Grand Rapids, Mich. Application September 11, 1939. 6 claims.

2,239,168. DUCTOR ROLLER CONTROL for inking mechanisms of flat bed cylinder printing presses. The invention is specifically concerned with means whereby the roller is free to spin when moving into contact with the fountain roller. Invented by Edward F. Dudley, Oak Park, Ill. Assigned to Miehle Printing Press & Mfg. Co., 2021 Hastings St., Chicago, Ill. Application June 29, 1940. 4 claims.

2,239,383. PRINTING STAND for coloring paper used in box manufacture, designed to eliminate the usual air jet arrangement for removal of ink from certain zones. For this mechanism, the invention substitutes a simplified doctor blade mechanism. Invented by Pierre Drewsen, Sandusky, Ohio. Assigned to Hinde & Dauch Paper Co., Sandusky, Ohio. Application March 29, 1939. 4 claims.

For Patent Research in the U. S. Patent Office, or a prompt estimate on any type of search, address INVENTION, INC., Barrister Bldg., Washington, D. C.

Craftsmen Meet

The Inter-Club Conference of the Eighth District of the International Association of Printing House Craftsmen was held May 9 and 10 at the Muehlebach Hotel in Kansas City, Mo.

Meritorious Booklet

The International Association of Electrotypers and Stereotypers, Inc., 949 Leader Bldg., Cleveland, O., has published a well illustrated booklet, 6 in. by 9¼ in. size, consisting of 16 pages and cover, entitled *Engraving, Composition and Lockup Standards for Better Electrotypes*.

The object in publishing the booklet is to define basic engraving, composition and lockup requirements for electrotype reproduction. Expressing it another way, the quality of electrotypes depends upon the care with which the customer, the photo-engraver, composing room and electrotyper do their work. In the booklet are explained what should and should not be done in the engraving and composing room.

Copies of the booklet may be obtained from the Association, address as above, at 10c per copy.

TRENDS

(Continued from Page 2)

such form that readers can read it comfortably. Time and again I look at a paper sideways and can't see where the column breaks come. It looks like one great Sahara Desert of gray area across the page. This is a bad situation which cannot be justified by any saving because what the publisher needs today is circulation, reader interest, and effectiveness.

If you feel that you must cut column rules down to these narrow widths, do what some intelligent composing rooms have done, indent the composition a few points at each end of the slug, to reintroduce a normal amount of white space at the ends of the line, thus making up for the width subtracted from the column rule. You can follow this practice quite properly. Where the type runs out to the face of a narrow column rule, there are many instances where the space between the word at the end of one line and the word beginning the next column is less than the space between the words in each line.

In other words, these wholly unrelated words are tied together far more closely than the words in the column the subscriber is reading — which is perfect nonsense. If you want to make newspapers more effective and easier to read, don't fall for fallacious philosophy.

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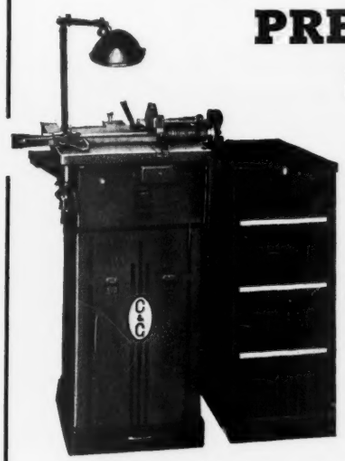

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MANUAL *of* STEREOTYPING

by JOSEPH D. GOGGIN

In this book, the author discusses the three primary factors in stereotyping — equipment, materials and manipulation. Since the stereotyping process largely is an Art and the results to be obtained in good plate-making are dependent upon the coordination of equipment, materials and manipulation, a reliable guide for securing this coordination is essential.

In preparing this book, the author has drawn upon his extensive practical experience and study in the Art. The all-important preparation of the form from which the mold is to be made and the molding and casting procedures are thoroughly discussed from the standpoint of the peculiar requirements of the process.

A Glossary and Encyclopedia gives definitions of terms used in the stereotype process. Bound in black cloth, gold stamped, 256 pages, size 5½ in. by 8 in. Price, $5, cash with order. Handling margin makes it necessary that cash accompany all orders for books.

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BAD SLUGS & PLATES

The next feature which the judges consider is advertising typography. Advertising typography is a really important thing to you. It is tremendously important to every newspaper publisher.

A publisher may think he is selling white space, circulation and reader interest. But he isn't. He is selling net cash returns of profits to advertisers. The only money the paper can get next year from advertising must come out of profits to its advertisers increased by advertising. So the publisher is vitally concerned, not with how many inches of lineage is sold, but with how effective that advertising will prove in influencing readers to go down town and buy the advertised goods from a merchant. As a result of these purchases the merchant will make more profit and thus have more money to spend on next month's or next year's advertising. So, the publisher can never escape being a party to the practical effectiveness of the physical presentation of any advertising story. Advertising typography is thus a matter of far more than passing interest.

The effectiveness of advertising typography depends on a good many factors. I cannot discuss all of these now, but I will mention a few. In the first place an advertisement must arrest attention when it is presented in the middle of a crowded page. An ad set with a lot of lines all, or nearly all of the same size, with little white space, when looked at by the reader who "reads as he runs," is on its way to oblivion. Such an ad won't help any merchant to make money, and it thus won't help you to sell that merchant more space.

The first thing a display advertisement must do is to hang out its flag or "shingle", the indexing mechanism of a real heading that will interest readers. If that head is to have individuality and attractiveness, it must be set in an attractive modern typeface, set in upper and lower case. The text of the ad should be set in a size large enough to be read comfortably by the prospect whose attention was first arrested by the head. All too much advertising suffers seriously from being crowded into types of limited size ranges to the great disadvantage of the publisher who should want to sell display advertising set in larger type sizes that will attract people's attention.

We thus need display first. And next we need the rest of the advertising story told clearly in type that can be read with ease. We need captions and prices closely related to illustrations of merchandise, so that people shall not become confused as to whether a description and prize relates to one product or another.

Typefaces are more important to display advertising than elsewhere, because typefaces have individuality and character. Stores of one kind should use typefaces of a certain character, while other advertisers require quite different faces for their display heads. You may be quite likely to say to me that you cannot possibly keep up with the procession of new typefaces which are coming out all the time. But let me say to you equally emphatically that typeface equipment is easy to keep up to date and modern, if you do not neglect it for nine years on end. Good accountants keep a record of the cost of production. In the cost of production of every day's paper is a certain charge for depreciation of typefaces or typeface matrices. If you will take 75% of your depreciation reserve on typeface equipment once properly set up, and spend it once every three months or nine months (not nine years) for new typefaces, you can keep your typeface equipment always in shape, and you will never be called upon to invest in it another dollar of capital expenditure.

The matter of general makeup comes up next for consideration by your judges: Variety and spontaneity in arrangement or placing of heads and pictures count largely in this field. Pictures on the front page contribute greatly to the attractiveness of that page. Some publishers are reluctant to put pictures on the front page. In this day and generation I would consider such a policy a mistake. If they would take a vote of their readers, instead of following their own prejudices or opinions, the ballots of readers would, I believe, be overwhelmingly in favor of pictures. Such preference should, of course, be controlling. The picture or illustration policy of a newspaper has a great deal to do with the attractiveness and reader interest of that paper.

The front page — or any page for that matter — profits by variety of makeup. One of the papers that impressed us best sent in three issues, each one of which was entirely different in makeup and spotting of pictures, from each other

issue. That is good practice, because we look at a newspaper and carry a picture of it in our mind. When we see a new issue we want to have definite though unconscious notice that it is not something we have already seen, read and handled. We want to recognize it instantly as something new—something we have not seen before. A different spotting of pictures on the page will help greatly toward that recognition.

Some newspapers have run certain features up to the top of the page and cut down the width of the masthead. This is an interesting novelty. Others have put boxes in the upper right-hand corner to give a digest of the day's news or to handle late spot news. This also makes an interesting arrangement. But it is not so important what you do as it is to keep the picture or pattern of the page constantly changing, so that your readers don't go stale on you and think to themselves "I am sick and tired of that, I have been looking at it for months and years." A lively, constantly changing makeup will effectively defeat such an attitude on the part of readers.

Very few publishers so far as I can observe, have any realization of the potential importance of the bottom half of the first page. They make a great effort with the top half of the first page, but very few of them try to deal effectively with the bottom half, which can be made an area of real interest and attraction to readers.

The final feature of presswork should be, but is not, the simplest of all. Very few newspapers are well printed. Good presswork should be easy to obtain if the publisher will just get a bit hard boiled and demand it — or else. Just put your foot down and insist that the plant find the right ink, the right distribution, and so forth and make it clear that nothing short of good printing will be acceptable. Improvement in the presswork on a newspaper will do a great deal to heighten the impression of general quality.

May I remind you again of my picture of changing scenery. We all get tired of too much of anything. When you dish up the same fare to intelligent, active-minded people day after day, without change of any kind; when you adopt a formula which you think cannot be changed, you run the dangerous risk of doling out monotony which will not prove commercially profitable.

(Concluded)

APPLETON POST-CRESCENT

Nazis, Russia Agree on Red Sphere of Interest

British Again Raid Italians at Taranto

108 Dead, 51 Sailors Missing; Relief From Cold Is Forecast

Italians Try to Halt Greek Advance; Captain Tells of Invaders' Defeat

THE DECATUR DAILY REVIEW

Draft Drawings Take 17 Hours; Only Few Listed to Report Soon

Italians Push Defenders Back. But Greeks Say Fortifications In Mountain Region Will Hold

Fire Sweeps War Offices

Draft Drawings in Order of Registration Numbers Start on Page 9 Today

First Winner, Class C (Papers from 10,000 to 25,000 circulation) — Appleton (Wis.) Post-Crescent.

First Winner, Class D (Papers over 25,000 circulation) — Decatur (Ill.) Daily Review.

Magnified — Shows air vents which permit escape of steam and which expedite drying. Thru these perforations more glue is exposed to the air and the felt dries quickly and sets permanently.
New
IT TEARS EASILY at the holes to any length . . . . like postage stamps . . . .
The Old Way
When ordinary felt is heated the moisture on the adhesive generates steam which forces the felt to part at the bond and lift from the mat.
The New Way
Ventilated Felt allows the steam to escape through air vents, thus the adhesive dries quicker and the bond is positive.
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IT'S SELF-VENTILATING
the greatest improvement in matrix backing since the advent of ready gummed felt
GUMMED PACKING FELT
MORE FLEXIBLE
Make This Test
Wrap a strip of ordinary felt around your finger. It will crack and spring out straight again when released.
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"This company will prepare LTF materials according to Foundation formulas, and will arrange for distribution in the principal cities of the United States and Canada.

PHOTO-TYPESETTING

(Continued from Page 16)

during the photographic exposure of its character, there being an aperture *8* in the walls of the channel *5* for the passage of light from the bulb *9* through lens *10* and shutter aperture *11* in front of the film holder *12*. After exposure of each matrix the ledge *7* retreats (the reciprocating movement of blade *6* and ledge *7* apparently being timed so that the left end of the latter will project into the channel *5* before each downward or displacement stroke of the former) and thus allows the exposed matrix to pass down and out of the bottom of channel *5* into a suitable receiver.

For pressing the line endwise toward the fixed wall *4* there is a follower *13* secured to the right end of side rods as shown and which in turn, at their left ends, are fastened adjustably by means of screws to a cross-tie *14*. The latter may be anchored, as by a screw, to one or another of the middle or cross joints of a lazy-tongs, the last or right end joint of which tongs is fixedly secured to a bracket mounted on the outer face of the wall *4*. The several cross joints of the lazy-tongs are pivoted in blocks arranged to slide freely along a supporting rail. A weight *15* on the end of a cord *16* passing over suitably disposed pulleys and fastened to the left end joint of the lazy-tongs exerts a constant leftward pull on the tongs and consequently on the follower *13* and the matrix line confined between the latter and wall *4*.

Thus, after each displacement of a matrix from the end of the line by the pusher *6* the remaining elements of the line are moved leftward along channel *3* until the next matrix arrives against the wall *4*. The actual amount of such movement of the line is equal exactly to the body thickness (setwidth) of the previously displaced matrix and this movement is transmitted to the film holder *12* in order to advance the latter and thus present a fresh portion of the film for each successive photographic exposure.

Such advance of the film is coordinated with the successive displacements of matrices from the composed line. This is accomplished by connection of the cord *16* to a bracket *17* secured to the film holder or casing, the latter being slidable on suitable guides in a rigid supporting frame *18*. The weighted end of the cord *16* is also secured to the bracket *17* so that each advancing step of the follower *13* when the leading matrix is removed results in a corresponding advance of the film holder *12*. The actual amount of movement of the holder each time is sufficient to produce proper letter spacing of the characters as they are successively photographed.

When a spacer *2*, contacts the fixed left wall *4*, as the result of the step-by-step advance of the line caused by the follower *13*, the spacer drops onto the ledge *7* but being an opaque body it shuts off the light passing through aperture *8* so that only a blank space is produced on the film. The expanded thickness of the spacer, however, is preserved up to the point of its discharge from the end of the line. Thus the advance of the

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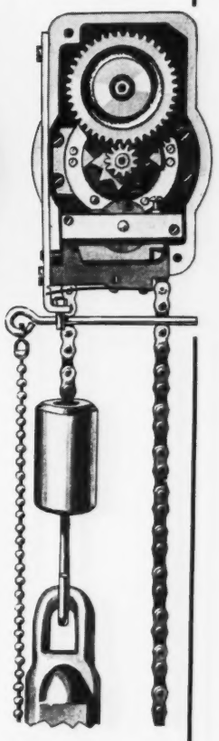

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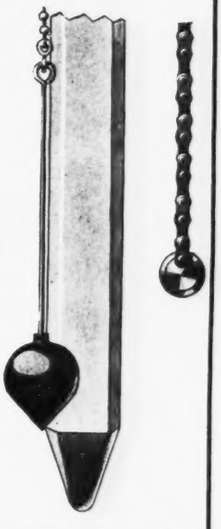

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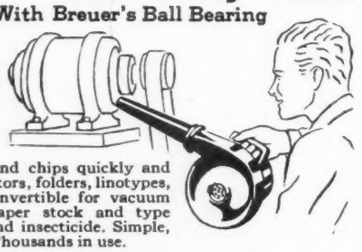

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line by the follower to an extent equal to the expanded thickness of each spacer produces the proper word space movement of the film. After all of the matrices in a line have been exposed the film may be moved to present a fresh area for the succeeding line, the film holder and the follower connected thereto by the cord obviously being moved back to starting position for the new line.

CELLULOID CUTS

(Continued from Page 19)

its operating mechanism are mounted on the same carriage carrying the scanning system. The carriage, of course, travels parallel to the cylinder. The stylus, however, oscillates horizontally.

Cut Production Time

Some idea of the cut-production time can be obtained by the following figures: A standard 120-line screen halftone area bears 14400 dots per square inch. At the rate of 360 dots per second, the stylus would indent 1 square inch of the celluloid in 40 seconds. This production rate is based on continuous operation of the stylus. However, it is not possible to obtain continuous operation of the stylus from a positive transparency only partially covering the cylinder. The reason for this is that in the case of a 2 in. by 3 in. 120-line halftone, the positive transparency copy on the glass cylinder would cover somewhat under a third of the circumference of the 11 in. glass cylinder. Therefore, according to Mr. Washington, the time required to make a 2 in. by 3 in. cut would be 14 min. By mounting three such positive transparencies around the glass cylinder circumference with complementary celluloid material on the metal cylinder, three similar cuts can be made in the same time as is required for the making of one cut.

After the cut has been engraved, it is removed from the machine. It is then washed in water to remove the thin powdery coating created by the heated stylus indenting the celluloid. The cut is then ready for mounting on a wooden or metal block by fastening it with a special cement.

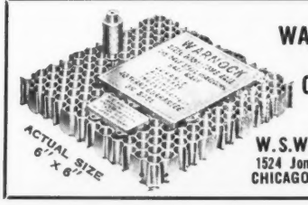
Naturally, it will be seen that the finer the screen the longer time will be required for making a cut. Likewise, the coarser screen cuts can be produced in relatively less time.

STEP AND REPEAT

(Continued from Page 14)

photo-composing machine can make multiple negatives for exposure on sensitized zinc or copper, but it remained for the development of a special kind of photo-composing machine, designed by Mr. Huebner, to demonstrate the complete practicability of step-and-repeat to the making of multiple original photo-engravings. This machine, known as the Monotype-Huebner Universal Process Machine, is especially designed for the convenient and rapid application of step-and-repeat in the making of small multiple negatives or positives and for exposing them on a large glass negative in exact predetermined position as many times as may be desired up to the full size of the glass which the machine will take.

For instance, a small multiple negative containing eight reproductions of an original single negative may be made on this machine, and then exposed in eight different positions on a larger glass negative. The latter will then contain 64 exact duplicates of the original. These images may be converted into an engraving by exposure in a vacuum printing frame and etching the plate in the usual way. Several sets of engravings, one for printing



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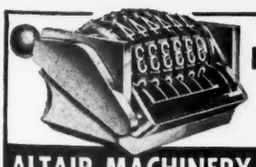

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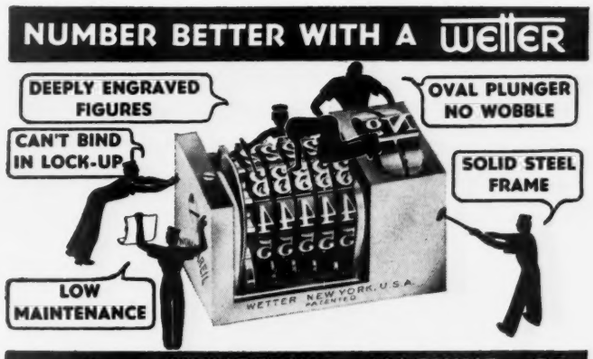

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P116

each color, may be made and each color will print in exact perfect register with all others.

The operations for making a multiple from a single original negative (or positive) for one or more colors are practically the same for both offset printing and for making an etched engraving. The difference in processes comes when exposure is made—in one case the exposure is made as many times as may be desired to repeat the multiple images on a lithographic press plate for printing by offset; in the other case the exposure of the multiple negative is made direct onto sensitized zinc or copper, which is afterward etched and becomes the multiple original engraving.

Of course, the making of a multiple must start with a single negative containing an image which it is desired to reproduce in multiple. This single negative may be a photographic reproduction of a single color design, or of one of several colors required to produce a multicolor design. Multiples are made by contact, the placement of each image being positively controlled to within 0.001 in., thus giving absolute register in all colors and in all positions, no matter how many reproductions are made on the same glass negative. Each color is "stepped up" on the multiple in exact position as indicated by the layout.

Naturally, there will be a limit to the size of the multiple original engraving which it is practical to produce by this method and also to use in printing. But multiple original engravings up to 16 in. by 20 in., or perhaps even larger, can be made and can be used for direct printing. The range of work for which multiple original engravings would seem to be especially adapted includes gang-forms of designs in one or more colors for tickets, gummed labels, stickers, small posters, post-cards, cigar bands, small folding paper boxes, seals, stamps, advertising novelties, coupons, "bleed" labels, wrappers, decalcomania printing, etc.

The designs may be simple one-color jobs, reproduced from a line drawing; they may include Ben Day screen or half-tone, or be a combination of line, half-tone and Ben Day, or complicated color forms. In fact, any design which can be put into a single negative of one or more colors can be reproduced in a multiple negative and etched on zinc or copper plate.

One big advantage of the application of step-and-repeat would lie in the ability to etch two or more sizes of the same design on one engraving. For instance, label designs of irregular shape could be reproduced any number of times up to the size of the plate. Designs can be so placed as to take advantage of the savings of straight-edge trimming, etc.

One might write a volume in trying to outline the advantages which would accrue to the letterpress printer if photo-engravers would give them multiple original negatives for use in printing single and multi-color jobs. One of the advantages would be the saving of almost all the time now spent in registering forms composed of duplicate electros. With every part of each engraved plate in exact register with the same part of all other plates, registering a color job would involve almost no time loss whatsoever. The savings in this item alone would in many cases more than pay for the engravings.

The accompanying illustration (Fig. 1) shows an M-H Universal Process Machine with Negative Holder and Hood, in position for exposure. Placement of the negative holder for accurate position of the image is attained by means of the well-known Monotype system of notch bars and micrometer screw. Locations within limits of 0.001 in. are positively assured.

The Registering Device for registering negatives in the negative holder is shown in Fig. 2. This is a very important part of the precision operation of any step-and-repeat system. After the negative is put in registered position the negative holder is placed on the M-H Universal Process Machine, and there exposed in as many different positions as may be desired.

Right now, I know of but one photo-engraving plant which is using the step-and-repeat process in making multiple original engravings on special order for printers. These cover a wide range of work. Orders for sets of two-, three-, and four-color plates are common, and there is a surprising demand for plates to print unusual designs in five to ten colors or more. When a few more plants are equipped to make multiple original engravings we will know definitely that step-and-repeat can be used to aid the letterpress printer.

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2 **PAPER** — Champion offers information on "paper for every use." As advertised in this issue, page 4.

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4 **INK**—Ask for literature on Sinclair & Valentine Zephyr Blacks.

5 **PRESS**—Get complete details on this "Revolutionary new Miehle press."

6 **PRESS BLANKETS** — Tingue, Brown & Co. will send you specifications on Tingue blankets for every use. As advertised in this issue, page 40

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8 **NEWSPAPER PRESS** — Get details of Goss AntiFriction Presses for magazine and newspaper production.

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11 **INK** — Eagle Printing Ink Co. offers informative material on color. Send for it.

12 **17x22 PRESS**—Get full details on the "Kelly features for every printer." As advertised in this issue, page 10.

13 **INK** — F & L offers information on "laboratory proven" printing inks. As advertised in this issue, page 6.

14 **PAPER** — Bryant Paper Co. will send you samples of Bryant Papers for all purposes.

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22 **ROLLERS** — Get details and advantages of synthetic rubber rollers from Dayton Rubber Mfg. Co.

23 **FOLDERS** — Dexter will give you latest specifications of the four models of the Cleveland Folder.

24 **CUTTER KNIVES** — To get details of Coes Micro-Ground Knives, send the post card.

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Composing Room

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32 **TYPE METAL** — Send for the informative Imperial booklet about type metal problems. As advertised in this issue, page 42.

33 **INTERTYPE** — Ask for booklet showing the new Intertype face, Waverley. As advertised in this issue, outside back cover.

34 **PROOF PRESSES** — Return the post card for information on the newest Vandercook Electric Proof Presses No. 22 and 23. As advertised in this issue, inside back cover.

35 **NUMBERING MACHINES** — Wetter offers you an unique booklet, "Numbering For Profit."

36 **COMPOSING MACHINE** — Circle this number for complete details of the Monotype "3 Way System." As advertised in this issue, page 23.

37 **METAL FEEDER** — Get information on the advantages and features of the Jordan Metal Feeder.

38 **STRIP MATERIAL MACHINE** —Circle this number for information on Elrod. As advertised in this issue, page 3.

39 **TELETYPESETTER** — Send for booklet about composition with Teletypesetter. As advertised in this issue, page 41.

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48 **COMPOSING MACHINE** — Send for catalog on the features of the Linograph "50". As advertised in this issue, page 36.

Platemaking

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50 **ZINC** — Atlantic Zinc Works will send you the booklet, "Getting Down To Zinc Facts." As advertised in this issue, page 37.

51 **STEREO SUPPLIES** — Get the Eastern Newspaper Supply Catalog. Return the post card. As advertised in this issue, page 38.

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54 **MASTERFORMER** — Sta-Hi Corp. offers a booklet on thec uses and features of Master Formers. As advertised in this issue, page 1.

55 **DRY MAT** — Circle this number for a sample of Wood Dry Mats. As advertised in this issue, page 35.

56 **ZINC** — Send the post card for complete data on Edes products for photo-engraving.

57 **DRY MAT** — Circle this number for test samples of Morley Trutone Mats.

Miscellaneous

58 **PAPER DRILLER** — Get the illustrated catalog on Challenge Paper Drilling Machines. As advertised in this issue, page 35.

59 **MOTORS** — Kimble Electric Co. offers a booklet on motors for the printing industry. As advertised in this issue, page 45.

60 **BEARINGS** — Return the post card for information on Timken Tapered Roller Bearings.

61 **ELECTRIC TOOL** — Get descriptive folder about the Whiz Electric Tool. As advertised in this issue, page 41.

62 **BEARINGS** — Get information from SKF on bearings for your requirements.

Postage Will be Paid by Addressee

No Postage Stamp Necessary If Mailed in the United States

BUSINESS REPLY CARD

FIRST CLASS PERMIT NO. 2255 (SEC. 510 P. L. & R.) CLEVELAND, OHIO

PRINTING EQUIPMENT *Engineer*

1276 West 3rd Street

Cleveland, Ohio

NOTE

If you do not find the equipment or supplies in which you are interested on this post card insert look it up in your 1941 PRINTING EQUIPMENT Engineer "Where To Buy" Catalog.

MAKE

40

PROOFS A MINUTE ON THE VANDERCOOK *ELECTRIC* PROOF PRESS

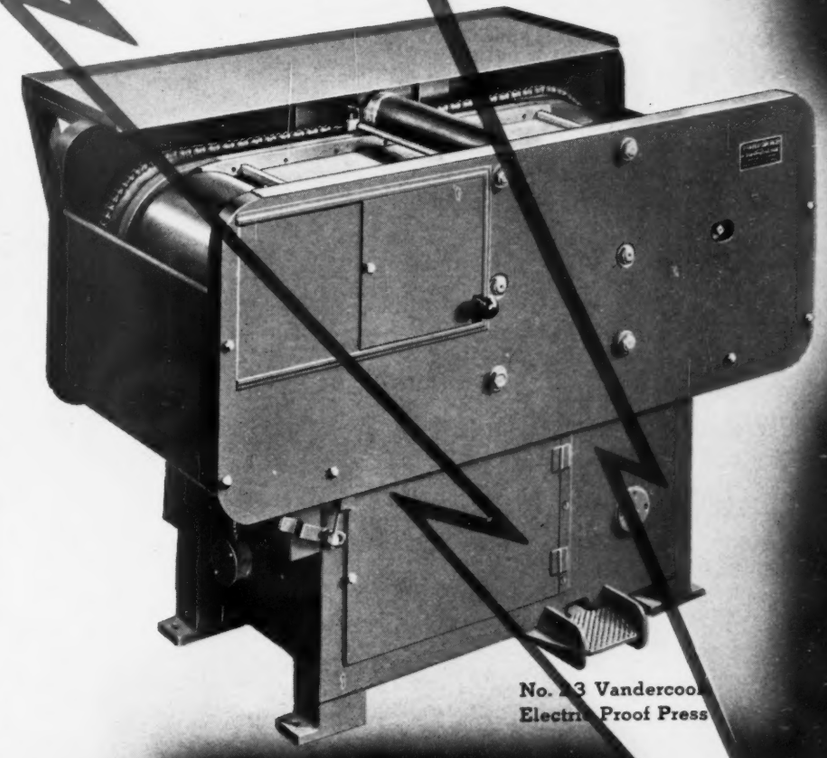
The No. 23 Vandercook Electric Proof Press will make 40 proofs of a tabloid size newspaper page in one minute. It will print ads, catalog pages, or forms in galleys up to 14"x27½" with equal speed.

The No. 23 Vandercook Electric Proof Press is engineered for speed. It is arranged for easy feeding with minimum operator motion. Bed and side walls are designed for quick galley change. Feed board is close to press bed, making feed and removal of printed sheets practically a continuous, swinging operation. Controls are conveniently located. Speed may be regulated at 20, 30, or 40 proofs a minute.

Major newspaper and commercial printing plants throughout the country use No. 23 Vandercook Electric Proof Presses. There are 18 in the United States Government Printing Office.

The No. 22 Vandercook Electric Proof Press is similar in design and construction to the No. 23. It is used extensively for proving smaller ads, forms, and composition in galleys as it comes from the typesetting machines. It will take a form 8"x25¾".

Where there is volume proving of composition in galleys, Vandercook Electric Proof Presses afford the fastest and most economical method. You should have the facts on the latest Vandercook Electric Proof Presses. Mail the coupon.



No. 23 Vandercook Electric Proof Press

VANDERCOOK & SONS

Main Office and Factory
908 N. Kilpatrick Ave., Chicago

Eastern Branch
220 E. 45th St., New York

Please mail complete information on the latest No. 22 and No. 23 Vandercook Electric Proof Presses.

Name_____

Address_____

Announcing

WAVERLEY: A NEW INTERTYPE FACE OF SCOTTISH ORIGIN DESIGNED ESPECIALLY FOR THE ALERT AND DISCRIMINATING BOOK PUBLISHER

Distinctly a book face, designed to invite interest to a page without any tiring eccentricities, Waverley has many features especially appealing to the advertising world. Its appearance of extra width, while still retaining an ability to pack a lot of matter in reasonable compass, its crisp sparkle and amenability to raising or lowering in key by judicious leading, should assure it a leading place in today's typographical parade, whether for de luxe brochures, magazine pages, advertisements, or fine editions of full-length books. A very definite feeling of precision qualifies Waverley for use in modern format, at the same time supplying a moving grace to replace what some typographers today regard as a static monotony of sans serif and square serif types. Waverley is now ready in 8, 10, 12 and 14 point, and other sizes are in course of preparation. This advertisement is set in the 12 and 14 point sizes. Ask us to send a booklet with a more complete showing of this new, modern type face.

INTERTYPE CORPORATION, *360 Furman St.*, BROOKLYN, N.Y.

PRINTING EQUIPMENT
Engineer

ANPA

MECHANICAL CONFERENCE

BUFFALO, N. Y. • JUNE 9-10-11, 1941

4000 per Minute—and Perfect

Next to top grade color printing, die cutting is perhaps the **most important** operation in quality label production.

We recently spent $5,000.00 for this marvelous **precision** machine.

It die cuts 4,000 labels per minute, and is **never "off"** more than .001".

Yes, we have **all the way through** the finest equipment money can buy . . . for the proof—try us!

Fifth
in a series showing why it pays to deal with a Label Specialist.

KALAMAZOO LABEL COMPANY, Kalamazoo, Michigan
LABEL MANUFACTURERS ***EXCLUSIVELY*** SINCE 1906 . . . FOUR MILLION PER DAY